

	Terms	Definition 1	Citation 1 [1]	Definition 2	Citation 2	Definition 3	Citation 3	Definition 4	Citation 4	Definition 5	Citation 5	Related terms and synonyms [2]	Legal definition applicable
	artificial general intelligence (AGI)	Algorithms that perform a wide variety of tasks and switch simultaneously from one activity to another in the manner that humans do.	Brookings_Inst tation	a machine that's as intelligent as a human and equally capable of solving the broad range of problems that require learning and reasoning	Wallace_Brian	Human-like intelligence, which can be applied widely as opposed to narrow AI, which can only be applied to one particular problem or task. Also called "strong" AI as opposed to "weak" AI.	AI_Ethics_Mar A_Cockeberg h						
	artificial intelligence (AI)	Interdisciplinary field, usually regarded as a branch of computer science, dealing with models and systems for the performance of functions generally associated with human intelligence, such as reasoning and learning.	Reznik_Leon	the field concerned with developing techniques to allow computers to act in a manner that seems like an intelligent organism, such as a human would. The aim vary from the weak end, where a program seems "a little smarter" than one would expect, to the strong end, where the strength is to develop a fully conscious, intelligent, computer-based entity. The lower end is continually disappearing into the general computing background, as the software and hardware evolves.	Raynor	the study of ideas to bring into being machines that respond to stimulation consistent with traditional responses from humans, given the human capacity for contemplation, judgment and intention. Each such machine should engage in critical appraisal and selection of differing opinions within itself. Produced by human skill and labor, these machines should conduct themselves in agreement with life, spirit and sensibility, though in reality, they are imitations.	Shubendun_an d_Vipr	a field of study that is adept at applying intelligence to vast amounts of data and deriving meaningful results	Wallace_Brian	The application of computational tools to address tasks traditionally requiring human analysis.	Comptroller_O ffice	machine learning; data science	
	artificial intelligence learning	The ingestion of a corpus, application of semantic mapping, and relevant ontology of structured and/or unstructured data that yields inference and correlation leading to the creation of useful conclusive or predictive capabilities in a given knowledge domain. Strong AI learning also includes the capability of creating unique hypotheses, attributing data relevance, processing data relationships, and updating its own lines of inquiry to further the usefulness of its purpose.	IEEE_Guide_1 PA										
	artificial narrow intelligence (ANI)	[an AI system that] is designed to accomplish a specific problem-solving or reasoning task.	OECD_Artifici al_Intelligence _in_Society	Artificial Narrow Intelligence, also known as weak or applied intelligence, represents most of the current artificial intelligent systems which usually focus on a specific task. Narrow AIs are much much better than humans at the task they were made for: for example, look at face recognition, chess computers, calculus, and translation. The definition of artificial narrow intelligence is in contrast to that of strong AI or artificial general intelligence, which aims at providing a system with consciousness or the ability to solve any problems. Virtual assistants and AlphaGo are examples of artificial narrow intelligence systems.	AI_in_Medical _Imaging_glos sary							weak intelligence; applied intelligence	
	artificial neural networks	A computing system, made up of a number of simple, highly interconnected processing elements, which processes information by its dynamic state response to external inputs.	Reznik_Leon	A good definition of ANN, is given by Haykin [1] describing ANN as a massively parallel combination of simple processing unit, which can acquire knowledge from environment through a learning process and store the knowledge in its connections.	gureven_defini tion_2001	Definition 1. A directed graph is called an Artificial Neural Network (ANN) if it has s at least one start node (or Start Element; SE), s at least one end node (or End Element; EE), s at least one Processing Element (PE), s all the nodes used must be Processing Elements (PEs), except start nodes and end nodes, s a state variable is associated with each node i, s a real valued weight w _{ki} associated with each link (ki) from node i to node k, s a real valued bias b _k associated with each node k, s at least two of the multiple PEs connected in parallel, s a learning algorithm that helps to model the desired output for given input, s a flow on each link (kj) from node k to node j, that carries exactly the same flow which equals to it caused by the output of node k, s each start node is connected to at least one end node, and each end node is connected to at least one start node, s no parallel edges (each link (ki) from node i to node j is unique).							
	assessment	Action of applying specific documented criteria to a specific software module, package or product for the purpose of determining acceptance or release of the software module, package or product.	IEEE_Soft_Vo cab	the action or an instance of making a judgment about something: the act of assessing something. : APPROX324.	Merriam-Webster_uses stment								
	asset	Item, thing, or entity that has potential or actual value to an organization, item that has been designed for use in multiple contexts.	IEEE_Soft_Vo cab										
	attack	Action targeting a learning system to cause malfunction.	NISTIR_8209 Draft	Any kind of malicious activity that attempts to collect, disrupt, deny, degrade, or destroy information system resources or the information itself.	CSRC								
	attribute	Property associated with a set of real or abstract things that is some characteristic of interest.	IEEE_Soft_Vo cab	A quantity describing an instance. An attribute has a domain defined by the attribute type, which denotes the values that can be taken by an attribute.	Kohavi_Ron	property or characteristic of an object that can be distinguished quantitatively or qualitatively by human or automated means	aimc_measure ment_2022 citing ISO/IEC TR 24029-1						
	audit	Systematic, independent, documented process for obtaining records, statements of fact, or other relevant information and assessing them objectively, to determine the extent to which specified requirements are fulfilled.	IEEE_Soft_Vo cab	To conduct an independent review and examination of system records and activities in order to test the adequacy and effectiveness of data security and data integrity procedures, to ensure compliance with established policy and operational procedures, and to recommend any necessary changes.	FDA_Glossary	Independent examination of a software product, software process, or set of software processes to assess compliance with specifications, standards, contractual agreements, or other criteria	NASA_Soft_S s_and s	Independent review conducted to compare the various aspects of the laboratory's performance with a standard for that performance. Also defined as a systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which audit criteria are fulfilled.	UNODC_Gloss ary_QA_CEP				
	audit log	A chronological record of system activities, including records of system accesses and operations performed in a given period.	SP800-37										
	authenticity	Property that an entity is what it claims to be	ISO/IEC_TS_57323(2022)en										
	automation	Independent machine-managed chronography of the operation of one or more digital systems.	IEEE_Guide_1 PA	conversion of processes or equipment to automatic operation, or the results of the conversion	IEEE_Soft_Vo cab	The system functions with no/little human operator involvement; however, the system performance is limited to the specific actions it has been designed to do. Typically these are well-defined tasks that have predetermined responses (i.e., simple rule-based responses)	DOD_TIVV						
	automation bias	over-relying on the outputs of AI systems	David_Leslie- Morgan_Briggs	It refers to a well-documented human propensity to automatically defer to automated systems, despite warning signals or contradictory information from other sources. In other words, human actors are found to uncritically abdicate their decision making to automation.	aiotc-harhat_hu man_2023								
	autonomic	A monitor-analyze-plan-execute (MAPE) computer system capable of sensing environments, interpreting policy, accessing knowledge (data --- information --- knowledge), making decisions, and initiating dynamically assembled routines of choreographed activity to both complete a process and update the set of environmental variables that enables the autonomic system to self-manage its own operation and the processes it oversees. An autonomic system is identified by eight characteristics: a) Known the resources to which it has access, what its capabilities and limitations are, and how and why it is connected to other systems. b) Is able to configure and reconfigure itself depending on the changing computing environment. c) Is able to optimize its performance to ensure the most efficient computing process. d) Is able to work around encountered problems either by repairing itself or routing functions away from the trouble. e) Is able to detect, identify, and protect itself against various types of attacks to maintain overall system security and integrity. f) Is able to adapt to its environment as it changes by interacting with neighboring systems and establishing communication protocols. g) Relies on open standards and requires access to proprietary environments to achieve full performance. h) Is able to anticipate the demand on its resources transparently to users.	IEEE_Guide_1 PA										
	autonomous vehicle	[an] automobile, bus, tractor, combine, boat, forklift, etc. . . . capable of sensing its environment and moving safely with little or no human input.	Introduction_t o_Information _Systems										
	autonomy	The system has a set of intelligence-based capabilities that allows it to respond to situations that were not pre-programmed or anticipated (i.e., decision-based responses) prior to system deployment. Autonomous systems have a degree of self-government and self-directed behavior (with the human's proxy for decisions).	DOD_TIVV	1. a state of independence and self-determination in an individual, a group, or a society. According to some theories, an inordinate focus on self-determination and achievement represents a risk factor for the development of major depressive disorder. 2. in self-determination theory more specifically, the experience of acting from choice, rather than feeling pressure to do so. This form of autonomy is considered a fundamental psychological need that predicts well-being.	APA_autonom y								
	availability	Ensuring timely and reliable access to use of information.	SP800-37	The property that data or information is accessible and usable upon demand by an authorized person.	NIST_SP_800	property of being accessible and usable on demand by an authorized entity	ISO/IEC_TS_57323(2022)en						
	back test	the quantitative evaluation of a model's performance both from a statistical and trading perspective	The_Science_of_Algorithms_Trading_and_Portfolio_Management										
	backpropagation	The way many neural nets learn. They find the difference between their output and the desired output, then adjust the calculations in reverse order of execution.	Hutton_Matthew	A classical method for error propagation when training Artificial Neural Networks (ANNs). For standard backpropagation, the parameters of each node are changed according to the local error gradient. The method can be very slow to converge although it can be improved through the use of methods that slow the error propagation and by batch processing. Many alternate methods such as the conjugate gradient and Levenberg-Marquardt algorithms are more effective and reliable.	Raynor								
	bad actor	Individuals or entities who are responsible for cyber incidents against enterprises, governments, and users.	Mark_Clumpas_2021	someone with objectives of studying and using cyber security techniques and tools for personal or private gain through malicious or threat activity.	Thomas_Edgar							black hat, threat actor	
	bagging	Bagging predictors is a method for generating multiple versions of a predictor and using these to get an aggregated predictor.	Reiman_Leo	In this approach we generate B different bootstrapped training data sets. We then train our method on each Bth bootstrapped training set in order to get $\hat{f}_b(x)$ and finally averaged the predictions, to obtain $\hat{f}_{\text{bag}}(x) = \frac{1}{B} \sum_{b=1}^B \hat{f}_b(x)$. This is called bagging.	hastie_introdu ction_2014								
	back-testing	A form of outcomes analysis that involves the comparison of actual outcomes with modeled forecasts during a development sample time period (i.e. sample back-testing) and during a sample period not used in model development (out-of-time back-testing), and at an observation frequency that matches the forecast horizon or performance window of the model.	Comptroller_O ffice										
	batched automation	Process automation execution of intentionally segregated work processes that are able to be processed irrespective of their contextual placement within a service.	IEEE_Guide_1 PA										
	benchmark	Standard against which results can be measured or assessed. Procedure, problem, or test that can be used to compare systems or components to each other or to a standard.	IEEE_Soft_Vo cab	An alternative prediction or approach used to compare a model's inputs and outputs to estimates from alternative internal or external data or models.	Comptroller_O ffice	The term benchmarking is used in machine learning (ML) to refer to the well-established comparison of ML methods regarding their ability to learn patterns in 'benchmark' datasets that have been applied as 'standards'. Benchmarking could be thought of simply as a sanity check to confirm that a new method successfully runs as expected and carefully find simple patterns that existing methods are known to identify.	olson_paul_2 007						

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	bias	A systematic error. In the context of fairness, we are concerned with unwanted bias that places privileged groups at systematic advantage and underprivileged groups at systematic disadvantage.	AI_Fairness_360	(computational bias) An effect which deprives a statistical result of representativeness by systematically distorting it, as distinct from a random error which may distort on any one occasion but balances out on the average.	OECD	(legal/ethics) Discrimination against or in favor of particular individuals or groups. In the context of ethics and politics, the question arises whether a particular bias is unjust or unfair.	AI_Ethics_Mar18_Crockerberg	(systemic bias) systematic difference in treatment of certain objects, people or groups. In the context of ethics and politics, the question arises whether a particular bias is unjust or unfair.	measurement_16022889_2022	(mathematical) A point estimator $\hat{\psi}_{\theta}$ is said to be an unbiased estimator of ψ_{θ} if $E[\hat{\psi}_{\theta}] = \psi_{\theta}$ for every possible value of ψ_{θ} . If $\hat{\psi}_{\theta}$ is not unbiased, the difference $E[\hat{\psi}_{\theta}] - \psi_{\theta}$ is called the bias of $\hat{\psi}_{\theta}$.	devore_probabilty_2004		
	bias mitigation algorithm	A procedure for reducing unwanted bias in training data or models.	AI_Fairness_360										
	bias testing	As it relates to disparate impact, courts and regulators have utilized or considered as acceptable various statistical tests to evaluate evidence of disparate impact. Traditional methods of statistical bias testing look at differences in predictions across protected classes, such as race or sex. In particular, courts have looked to statistical significance testing to assess whether the challenged practice likely caused the disparity and was not the result of chance or a nondiscriminatory factor.	SP1270										
	big data	Extremely large data sets that are statistically analyzed to gain detailed insights. The data can involve billions of records and require substantial computer processing power. Datasets are sometimes linked together to see how patterns in one domain affect other areas. Data can be structured into fixed fields or unstructured as free-flowing information. The analysis of big datasets, often using AI, can reveal patterns, trends, or underlying relationships that were not previously apparent to researchers.	Brookings_Inst	consists of extensive datasets primarily in the characteristics of volume, variety, velocity, and/or variability that require a scalable architecture for efficient storage, manipulation, and analysis	NIST_1900								
	binning	a technique of lumping small ranges of values together into categories, or "bins" for the purpose of reducing the variability (removing some of the fine structure) in a data set.	Pyle_2019										
	biometric data	personal data resulting from specific technical processing relating to the physical, physiological or behavioural characteristics of a natural person, which allow or confirm the unique identification of that natural person, such as facial images or dactyloscopic data;	GDPR	an individual's physiological, biological, or behavioral characteristics, including information pertaining to an individual's deoxyribonucleic acid (DNA) that is used or is intended to be used singly or in combination with each other or with other identifying data, to establish individual identity. Biometric information includes, but is not limited to, imagery of the iris, retina, fingerprint, face, hand, palm, vein patterns, and voice recordings, from which an identifier template, such as a faceprint, a minutiae template, or a voiceprint, can be extracted, and keystroke patterns or rhythms, gait patterns or rhythms, and sleep, health, or exercise data that contain identifying information.	CCPA	A measurable physical characteristic or personal behavioral trait used to recognize the identity, or verify the claimed identity, of an applicant. Facial images, fingerprints, and iris scan samples are all examples of biometrics.	SP800-12					personal data; processing	
	boosting	Boosting works by sequentially applying a classification algorithm to resampled versions of the training data and then taking weighted majority vote of the sequence of classifiers thus produced.	Friedman_2000				alone_measureme						
	breach	The loss of control, compromise, unauthorized disclosure, unauthorized acquisition, or any similar occurrence where a person other than an authorized user accesses or potentially accesses personally identifiable information; or an authorized user accesses personally identifiable information for another than authorized purpose.	CSRC				alone_measureme						
	broad artificial intelligence (broad AI)	Complex, computational, cognitive automation system capable of providing descriptive, predictive, prescriptive, and limited deductive analytics with relevance and accuracy exceeding human expertise in a broad, logically related set of knowledge domains.	IEEE_Guide_1PA	a sophisticated and adaptive system, which successfully performs any cognitive task by virtue of its sensory perception, previous experience, and learned skills.	Hochreiter_2019								
	built-in test	Equipment or software embedded in the operational components or systems, as opposed to external support units, which perform a test or sequence of tests to verify mechanical or electrical continuity of hardware, or the proper automatic sequencing, data processing, and readiness of hardware or software systems.	SP1011										
	bug-bounty	Reward given to independent security researchers, penetration testers, and white hat hackers for discovering exploitable software vulnerabilities and sharing this knowledge with the operator of a particular bug-bounty program (BBP).	Kuehn_2019										
	business process	A defined set of business activities that represent the steps or tasks required to achieve a business objective, including the flow and use of information, participants, and human or digital resources.	IEEE_Guide_1PA										
	business process management	Discipline involving any combination of modeling, automation, execution, control, measurement and optimization of business activity flows, in support of enterprise goals, spanning systems, employees, customers, and partners within and beyond the enterprise boundaries.	IEEE_Guide_1PA										
	business rule	Definition, constraint, dependency, or decision criteria that determine the method of execution of a task or tasks, or influences the order of execution of a task or tasks. Business rules assert control, or influence the behavior, of a business process within computing systems.	IEEE_Guide_1PA										
	calibration	A comparison between a device under test and an established standard, such as a UTM(NIST). When the calibration is finished, it should be possible to state the estimated time offset and/or frequency offset of the device under test with respect to the standard, as well as the measurement uncertainty.	CSRC	operation that, under specified conditions, in a first step, establishes a relation between the quantity values with measurement uncertainties provided by measurement standards and corresponding indications with associated measurement uncertainties and, in a second step, uses this information to establish a relation for obtaining a measurement result from an indication	alone_measureme	Set of operations that establish, under specified conditions, the relationship between values indicated by a measuring instrument or measuring system, or values represented by a material measure, and the corresponding known values of a measurand.	UNODC_Glossary_2019						
	capability	measure of capacity and the ability of an entity, person or organization to achieve its objectives	ISO/IEC_TS_5723:2020(a)										
	case	Single entry, single exit multiple way branch that defines a control expression, specifies the processing to be performed for each value of the control expression, and returns control in all instances to the statement immediately following the overall construct.	IEEE_Soft_Vo										
	causal inference	an intellectual discipline that considers the assumptions, study designs, and estimation strategies that allow researchers to draw causal conclusions based on data. The term 'causal conclusion' used here refers to a conclusion regarding the effect of a causal variable (often referred to as the 'treatment' under a broad conception of the word) on some outcome(s) of interest.	Jennifer_Hill										
	causative	acting as the cause of something	cambridge_2021										
	chatbot	Conversational agent that dialogues with its user (for example: empathic robots available to patients, or automated conversation services in customer relations)	COE_AI_Glossary	A chatbot is a computer program which responds like an intelligent entity when conversed with. The conversation may be through text or voice. Any chatbot program understands one or more human languages by Natural Language Processing	Khanna_2019								
	choreography	An ordered sequence of system-to-system message exchanges between two or more participants. In choreography, there is no central controller, responsible entity, or observer of the process.	IEEE_Guide_1PA										
	classification	When the output is one of a finite set of values (such as sunny, cloudy or rainy), the learning problem is called classification, and is called Boolean or binary classification if there are only two values.	AIMA	task of assigning collected data to target categories or classes.	alone_measureme								
	classifier	A model that predicts categorical labels from features.	AI_Fairness_360										
	clustering	Detecting potentially useful clusters of input examples.	AIMA	The basic problem of clustering may be stated as follows: Given a set of data points, partition them into a set of groups which are as similar as possible.	aggarwal_clustering_2013	the tendency for items to be consistently grouped together in the course of recall. This grouping typically occurs for related items. It is readily apparent in memory tasks in which items from the same category, such as nonhuman animals, are recalled together.	APA_clusterin						
	cognitive automation	The identification, assessment, and application of available machine learning algorithms for the purpose of leveraging domain knowledge and reasoning to further automate the machine learning already present in a manner that may be thought of as cognitive. With cognitive automation, the system performs corrective actions driven by knowledge of the underlying analytics tool itself, iterates its own automation approaches and algorithms for more expansive or more thorough analysis, and is thereby able to fulfill its purpose. The automation of the cognitive process refines itself and dynamically generates novel hypotheses that it can likewise assess against its existing corpus and other information resources.	IEEE_Guide_1PA										
	cognitive computing	Complex computational systems designed to: — Sense (perceive the world and collect data); — Comprehend (analyze and understand the information collected); — Act (make informed decisions and provide guidance based on this analysis in an independent way); and — Adapt (adapt capabilities based on experience) in ways comparable to the human brain.	IEEE_Guide_1PA										
	column	In the context of relational databases, a column is a set of data values, all of a single type, in a table.	techopedia_co										
	COMPAS controversy	A canonical example [of algorithmic bias] comes from a tool used by courts in the United States to make pretrial detention and release decisions. The software, Correctional Offender Management Profiling for Alternative Sanctions (COMPAS), measures the risk of a person to recommit another crime. Judges use COMPAS to decide whether to release an offender or to keep him or her in prison. An investigation into the software found a bias against African-Americans: COMPAS is more likely to have higher false positive rates for African-American offenders than Caucasian offenders in falsely predicting them to be at a higher risk of recommitting a crime or recidivism	Mehrabian_2022										
	computer vision	The digital process of perceiving and learning visual tasks in order to interpret and understand the world through cameras and sensors.	NSCAI	An image understanding task that automatically builds a description not only of the image itself, but of the three-dimensional scene that it depicts.	NBSIR_82-2382								

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concept drift	Use of a system outside the planned domain of application, and a common cause of performance gaps between laboratory settings and the real world.	SP1270	an online supervised learning scenario when the relation between the input data and the target variable changes over time.	Gama_2020	Systems that classify or predict a concept (e.g., credit ratings or computer intrusion monitors) over time can suffer performance loss when the concept they are tracking changes. This is referred to as concept drift. This can either be a natural process that occurs without a reference to the system, or an active process, where others are reacting to the system (e.g., virus detection).	Raynor						
confidentiality	Data confidentiality is a property of data, usually resulting from legislative measures, which prevents it from unauthorized disclosure.	OECD	Preserving authorized restrictions on information access and disclosure, including means for protecting personal privacy and proprietary information.	CSRC								
confusion matrix	A matrix showing the predicted and actual classifications. A confusion matrix is of size $L \times L$, where L is the number of different label values.	Kohavi_2008										
consent	"Consent" of the data subject means any freely given, specific, informed and unambiguous indication of the data subject's wishes by which he or she, by a statement or by a clear affirmative action, signifies agreement to the processing of personal data relating to him or her.	GDPR	"Consent" means any freely given, specific, informed, and unambiguous indication of the consumer's wishes by which the consumer, or the consumer's legal guardian, a person who has power of attorney, or a person acting as a conservator for the consumer, including by a statement or by a clear affirmative action, signifies agreement to the processing of personal information relating to the consumer for a narrowly defined particular purpose. Acceptance of a general or broad terms of use, or similar document, that contains descriptions of personal information processing along with other, unrelated information, does not constitute consent. Hovering over, mousing, pausing, or closing a given piece of content does not constitute consent. Likewise, agreement obtained through use of dark patterns does not constitute consent.	CCPA							personal data	
constituent system	Independent system that forms part of a system of systems (SoS) (note: Constituent systems can be part of one or more SoS. Each constituent system is a useful system by itself, having its own development, management, utilization, goals, and resources, but interacts within the SoS to provide the unique capability of the SoS).	ISO/IEC_25123:2022(en)										
constraint	Specification of what may be contained in a data or metadata set in terms of the content or, for data only, in terms of the set of key combinations to which specific attributes (defined by the data structure) may be attached.	OECD	A limitation or implied requirement that constrains the design solution or implementation of the systems engineering process and is not changeable by the enterprise.	IEEE_Std_7001-2014								
construct validity	the degree to which the application of constructs to phenomena is warranted with respect to the research goals and questions.	Wieringa_2011	Construct validation is involved whenever a test is to be interpreted as a measure of some attribute or quality which is not "operationally defined." The problem faced by the investigator is, "What constructs account for variance in test performance?"	crumbach_construct_validity	Established experimentally to demonstrate that a survey distinguishes between people who do and do not have certain characteristics. It is usually established experimentally.	finak_survey_2010	Establishing construct validity means demonstrating, in a variety of ways, that the measurements obtained from measurement model are both meaningful and useful.					
content harms	the psychological, social, physical, or other harms experienced by someone while they are interacting with content that is algorithmically recommended to them.	Chi_Gao_Ma_2022									harms of representation	
content validity	Refers to the extent to which a measure thoroughly and appropriately assesses the skills or characteristics it is intended to measure.	finak_survey_2010	the extent to which a test measures a representative sample of the subject matter or behavior under investigation. For example, if a test is designed to survey arithmetic skills at a third-grade level, content validity indicates how well it represents the range of arithmetic operations possible at that level. Modern approaches to determining content validity involve the use of exploratory factor analysis and other multivariate statistical procedures.	APA_content_validity								
contestability	A contestable statement, claim, legal decision, etc. is one that is possible to argue about or try to have changed because it may be wrong	cambridge_contestable_2023										
context	The context is the circumstances, purpose, and perspective under which an object is defined or used.	OECD	The immediate environment in which a function (or set of functions in a diagram) operates	IEEE_Std_7001-2014	the interrelated conditions in which something exists or occurs.	Merriam-Webster_context						
contextual learning	A computing system with sufficient knowledge regarding its purpose that it understands the source, relevance, and utility of data and inputs.	IEEE_Guide_1PA										
context-of-use	The Context of Use is the actual conditions under which a given artifact/software product is used, or will be used in a normal day-to-day working situation.	interaction_context_2023	comprises a combination of users, goals, tasks, resources, and the technical, physical and social, cultural and organizational environments in which a system, product or service is used[...]. It can include the interactions and interdependencies between the object of interest and other systems, products or services.	ISO_9241-11:2018								
controlability	property of a system that allows a human or another external agent to intervene in the system's functioning, such as system is heterogeneous.	ISO/IEC_25123:2022(en)										
control class	(control) group the set of observations in an experiment or prospective study that do not receive the experimental treatment(s). These observations serve (a) as a comparison point to evaluate the magnitude and significance of each experimental treatment, (b) as a reality check to compare the current observations with previous observation history, and (c) as a source of data for establishing the natural experimental error.	nist_statistics_2012										
controller	"Controller" means the natural or legal person, public authority, agency or other body which, alone or jointly with others, determines the purposes and means of the processing of personal data; where the purposes and means of such processing are determined by Union or Member State law, the controller or the specific criteria for its nomination may be provided for by Union or Member State law;	GDPR									personal data; processor	
copilot	An artificial intelligence powered software program designed to assist users with various tasks and automate features within compatible applications using advanced language models, machine-learning algorithms, and conversational interfaces to understand user requests and provide suggestions, summaries, and content generation in response.		A product or service that provides assistance using, incorporating and/or based on artificial intelligence software and artificial intelligence software services									
corpus (corpora)	A deliberately assembled collection of knowledge and data (structured and/or unstructured) believed to contain relevant information on a topic or topics to be used by software systems for which useful analysis, prediction, or outcome is being sought.	IEEE_Guide_1PA										
correlation	In its most general sense correlation denoted the interdependence between quantitative or qualitative data. In this sense it would include the association of dichotomized attributes and the contingency of multiply-classified attributes.	OECD	The correlation coefficient of two random variables y_1 and y_2 , denoted γ_{12} (y_1, y_2) is: $\gamma_{12} = \text{Cov}(y_1, y_2) / \sqrt{\text{Var}(y_1) \text{Var}(y_2)}$	bos_statistics_2005								
counterfactual explanation	Statements taking the form: Score p was returned because variables V had values $\{v_1, v_2, \dots\}$ associated with them. If V instead had values $\{v'_1, v'_2, \dots\}$, score q would have been returned.	wachter_counterfactual_2018										
counterfactual fairness	Our definition of counterfactual fairness captures the intuition that a decision is fair towards an individual if it is the same in (a) the actual world and (b) a counterfactual world where the individual belonged to a different demographic group.	kusner_counterfactual_2017	Given a predictive problem with fairness considerations, where A , X and Y represent the protected attributes, remaining attributes, and output of interest respectively, let us assume that we are given actual model (X, Y, F) , where $Y = A \cup X \cup X$. We postulate the following criterion for predictions of Y : Definition 5 (Counterfactual fairness). Predictor " F " is counterfactually fair if under any context $X = x$ and $A = a$, $F(x, a) = F(x, a')$ for all x and a, a' such that $a \sim a'$ (i.e., a and a' are indistinguishable by A).	kusner_counterfactual_2017	A fairness metric that checks whether a classifier produces the same result for one individual it does for another individual who is identical to the first, except with respect to one or more sensitive attributes. Evaluating a classifier for counterfactual fairness is one method for surfacing potential sources of bias in a model	aimc_measurements_2022, citing Machine Learning Glossary by Google						
countermeasure	Actions, devices, procedures, techniques, or other measures that reduce the vulnerability of a system. Synonymous with security controls and safeguards.	SP800-37	Actions, devices, procedures, or techniques that meet or oppose (i.e., counters) a threat, a vulnerability, or an attack by eliminating or preventing it, by minimizing the harm it can cause, or by discovering and reporting it so that corrective action can be taken.	GWUC							safeguard; security control	
criterion validity	compares responses to future performance or to those obtained from other, more well-established surveys. Criterion validity is made up of two subcategories: predictive and concurrent. Predictive validity refers to the extent to which a survey measure forecasts future performance. A graduate school entry examination that predicts who will do well in graduate school has predictive validity. Concurrent validity is demonstrated when two assessments agree or a new measure is compared favorably with one that is already considered valid.	finak_survey_2010	an index of how well a test correlates with an established standard of comparison (i.e., a criterion). Criterion validity is divided into three types: predictive validity, concurrent validity, and retrospective validity. For example, if a measure of criminal behavior is valid, then it should be possible to use it to predict whether an individual (a) will be arrested in the future for a criminal violation, (b) is currently breaking the law, and (c) has a previous criminal record.	APA_criterion_validity							criterion-referenced validity; criterion-related validity	
crowdsourcing	a type of participative online activity in which an individual, an institution, a non-profit organization, or company proposes to a group of individuals of varying knowledge, heterogeneity, and number, via a flexible open call, the voluntary undertaking of a task. The undertaking of the task, of variable complexity and modularity, and in which the crowd should participate bringing their work, money, knowledge and/or experience, always entails mutual benefit. The user will receive the satisfaction of a given type of need, be it economic, social recognition, self-esteem, or the development of individual skills, while the crowdsourcer will obtain and utilize to their advantage what the user has brought to the venture, whose form will depend on the type of activity undertaken.	Enrique										
customer	The beneficiary of the execution of an automated task, process, or service.	IEEE_Guide_1PA										
cybersecurity	Prevention of damage to, protection of, and restoration of computers, electronic communications systems, electronic communications services, wire communication, and electronic communication, including information contained therein, to ensure its availability, integrity, authentication, confidentiality, and nonrepudiation.	SP800-37										
dark pattern	"Dark patterns" means a user interface designed or manipulated with the substantial effect of subverting or impairing user autonomy, decisionmaking, or choice, as further defined by regulation.	CCPA										
data	Characteristics or information, usually numerical, that are collected through observation.	OECD	re-interpretable representation of information in a formalized manner suitable for communication, interpretation or processing	aimc_measurements_2022, citing ISO/IEC TR 24029-1								
data analytics	The analysis of data to gather substantive insights. Researchers use statistical techniques to find trends or patterns in the data, which give them a better understanding of a range of different topics. Data analytic approaches are used in many businesses and organizations to track day-to-day activities and improve operational efficiency.	Brookings Institution	Data analysis is the process of transforming raw data into usable information, often presented in the form of a published analytical article, in order to add value to the statistical output.	OECD	the process of applying graphical, statistical, or quantitative techniques to a set of API_data_data observations or measurements in order to summarize it or to find general patterns.							

Terms	Definition 1	Citation 1 [1]	Definition 2	Citation 2	Definition 3	Citation 3	Definition 4	Citation 4	Definition 5	Citation 5	Related terms and synonyms [2]	Legal definition applicable
descriptive analytics	Insights, reporting, and information answering the question, "Why did something happen?" Descriptive analytics determines information useful to understanding the cause(s) of an event(s).	IEEE_Guide_1 PA										
deterministic	modelling [that] produces consistent outcomes for a given set of inputs, regardless of how many times the model is recalculated. The mathematical characteristics are known in this case. None of them is random, and each problem has just one set of specified values as well as one answer or solution. The unknown components in a deterministic model are external to the model. It deals with the definitive outcomes as opposed to random results and doesn't make allowances for error.	Sourabh_Mehra_deterministic										
deterministic algorithm developer	An algorithm that, given the same inputs, always produces the same outputs. A general term that includes developers or manufacturers of systems, system components, or system services; systems integrators; vendors; and product resellers. Development of systems, components, or services can occur internally within organizations or through external entities.	CSRC SP800-37	Individual or organization that performs development activities (including requirements analysis, design, testing through acceptance) during the system or software life-cycle process.	IEEE_Soft_Vocab								
diagnostic analytics	Insights, reporting, and information answering the question, "Why did something happen?" Diagnostic analytics determines information useful to understanding the cause(s) of an event(s).	IEEE_Guide_1 PA										
diagnostics	Pertaining to the detection and isolation of faults or failures	IEEE_Software_Vocab										
differential privacy	Differential privacy is a method for measuring how much information the output of a computation reveals about an individual. It is based on the randomized injection of "noise." Noise is a random alteration of data in a dataset so that values such as direct or indirect identifiers of individuals are harder to reveal. An important aspect of differential privacy is the concept of "epsilon" or ϵ , which determines the level of added noise. Epsilon is also known as the "privacy budget" or "privacy parameter".	gong_differential_2020	For two datasets D and D' that differ in at most one element, a randomized algorithm $M(S)$ guarantees $\Pr(M(S) \in \mathcal{S} \mathcal{S} \in S) \leq \Pr(M(S') \in \mathcal{S} \mathcal{S} \in S') + \epsilon$. Furthermore, when $\epsilon \leq \delta$ an algorithm M is said to guarantee ϵ -differential privacy									
differential validity	Differential validity states that the validities in two applicant populations are unequal, that is, $p_1 \neq p_2$.	hunter_differential_1979										
digital labor	Digital automation of information technology systems and/or business processes that successfully delivers work output previously performed by human labor or new work output that would typically or alternatively have been performed by human labor.	IEEE_Guide_1 PA										
digital workforce	The collective suite of automation technologies delivering existing or new work output as applied in a business; the manifestation of digital labor.	IEEE_Guide_1 PA										
dimension	The dimension of an object is a topological measure of the size of its covering properties. Roughly speaking, it is the number of coordinates needed to specify a point on the object.	wedrum_math_2022	Distinct components that a multidimensional construct encompasses	IEEE_Soft_Vocab								
dimension reduction	Dimensionality reduction is the process of taking data in a high dimensional space and mapping it into a new space whose dimensionality is much smaller	Shalev-Shwartz, Shai										
discrimination	Discriminatory treatment of a person based on belonging to a category rather than on individual merit.	Zhabala_hair										
disparate impact	Facially neutral practices that might nevertheless have an unjustified adverse impact on members of a protected class.	Lipton, Zachary	For Predictor Y and Sensitive Impact S , Definition 6.2 Disparate Impact (DI) = $\Pr(Y = 1 S = 1) / \Pr(Y = 1 S = 0)$	friedler_comparative_2009								
disparate treatment	Intentional discrimination, including (i) decisions explicitly based on protected characteristics; and (ii) intentional discrimination via proxy variables (e.g. literacy tests for voting eligibility).	Lipton, Zachary										
distributional robustness	Optimizing the predictive accuracy for a whole class of distributions instead of just a single target distribution.	Meinshausen, Nicolai										
diversity	Diversity refers to anything that sets one individual apart from another, including the full spectrum of human demographic differences as well as the different ideas, backgrounds, and opinions people bring.	Seib, Roden, 2020	Diversity: The term diversity is used to describe individual differences (e.g. life experiences, learning and working styles, personality types) and group/social differences (e.g. race, socio-economic status, class, gender, sexual orientation, country of origin, ability, intellectual traditions and perspectives, as well as cultural, political, religious, and other affiliations) that can be engaged to achieve excellence in teaching, learning, research, scholarship, and administrative and support services.	GWU_diversity_and_inclusion	any dimension that can be used to differentiate groups and people from one another. It means respect for and appreciation of differences. But it's more than this. We all bring with us diverse perspectives, work experiences, life styles and cultures. Here in OGE we know the power of diversity is unleashed when we respect and value differences. Diversity is defined by who we are as individuals. HUD recognizes that its strength comes from the dedication, experience, talents, and perspectives of every employee. Diversity encompasses the range of similarities and differences each individual brings to the workplace, including but not limited to national origin, language, race, color, disability, ethnicity, gender, age, religion, sexual orientation, gender identity, socioeconomic status, veteran status, and family structures. We define workforce diversity as a collection of individual attributes that together help us pursue organizational objectives efficiently and effectively. In simple terms, diversity is the mix.	HUD_diversity_and_inclusion	the practice of including the many communities, identities, races, ethnicities, backgrounds, abilities, cultures, and beliefs of the American people, including underserved communities.	EO_DIRA_2021	inclusion			
documentation	Collection of documents on a given subject: written or pictorial information describing, defining, specifying, reporting, or certifying activities, requirements, procedures, or results.	IEEE_Soft_Vocab										
domain	Distinct scope, within which common characteristics are exhibited, common rules observed, and over which a distribution transparency is preserved.	IEEE_Soft_Vocab	A set of elements, data, resources, and functions that share a commonality in combinations of: (1) rules supported, (2) rules governing their use, and (3) protection needs.	SP800-160	-artificial intelligence-specific field of knowledge or expertise	aimc_measurement_2022, citing ISO/IEC 2382						
domain expertise	Domain expertise implies knowledge and understanding of the essential aspects of a specific field of inquiry.	McCue_Colleen										
domain shift	Differences between the source and target domain data	Stucke_Karin										distributional shift
drinking your own champagne	The practice in which tech workers use their own product consistently to see how well it works and where improvements can be made.	Kelley_Daphne_ding_2022										dogfooding, eating your own dogfood
dynamic process	The process in which one or more paths are defined and may be utilized based on the conditions present at the time of execution.	IEEE_Guide_1 PA										
eavesdropping	An attack in which an attacker listens passively to the authentication protocol to capture information that can be used in a subsequent active attack to masquerade as the claimant.	Renik, Leon	An attack in which an attacker listens passively to the authentication protocol to capture information that can be used in a subsequent active attack to masquerade as the claimant.	CSRC	A form of active wiretapping attack in which the attacker intercepts and selectively modifies communicated data to masquerade as one or more of the entities involved in a communication association.	NIST_CSRC_mis-is-the-middle_attack	An attack in which an attacker is positioned between two communicating parties in order to intercept and/or alter data traveling between them. In the context of authentication, the attacker would be positioned between claimant and verifier, between registrant and CSP during enrollment, or between subscriber and CSP during authenticator binding.	NIST_CSRC_mis-is-the-middle_attack	An attack where the adversary positions himself in between the user and the system so that he can intercept and alter data traveling between them.	NIST_CSRC_mis-is-the-middle_attack	man-in-the-middle, interception attack	
edge case	a problem or situation, especially in computer programming, that only happens at the highest or lowest end of a range of possible values or in extreme situations.	cambridge_dictionary_2022										
effective challenge	The concept of effective challenge is used to improve AI implementation at large financial services organizations in the US. An interpretation of an effective challenge is that, when building AI systems, one of the best ways to guarantee good results is to actively challenge and review each step of the development process. Of course, a culture of effective challenge must apply to everyone developing an AI system, even so-called "rock-star" engineers and data scientists.	Durnell_Cosmin_Hall										
embedding	An embedding is a representation of a topological object, manifold, graph, field, etc. in a certain space in such a way that its connectivity or algebraic properties are preserved. For example, a field embedding preserves the algebraic structure of plus and times; an embedding of a topological space preserves open sets, and a graph embedding preserves connectivity.	wedrum_math_2022										
emergent risks	One space X is embedded in another space Y when the properties of Y restricted to X are the same as the properties of X .											
emulation	The use of a data processing system to imitate another data processing system, so that the imitating system accepts the same data, executes the same programs, and achieves the same results as the imitated system.	IEEE_Soft_Vocab										ontological uncertainty
end event	An activity, task, or output that describes or defines the conclusion of a process.	IEEE_Guide_1 PA										
engineer	n. 3a: a designer or builder of engines; b: a person who is trained in or follows as a profession a branch of engineering; c: a person who carries through an enterprise by skillful or artful contrivance; 4: a person who runs or supervises an engine or an apparatus.	Merriam-Webster_engineer										
ensemble	v. 1: to lay out, construct, or manage as an engineer. a machine learning paradigm where multiple models (often called "weak learners") are trained to solve the same problem and combined to get better results. The main hypothesis is that when weak models are correctly combined we can obtain more accurate and/or robust models.	Joseph_Bocca_Ensemble_methods										
environment	Anything affecting a subject system or affected by a subject system through interactions with it, or anything sharing an interpretation of interactions with a subject system	IEEE_Soft_Vocab										
equality of odds	(Equalized odds) We say that a predictor h^* satisfies equalized odds with respect to protected attribute A and outcome Y , if A and Y are independent conditional on Y .	hardt_equality_2008	The probability of a person in the positive class being correctly assigned a positive outcome and the probability of a person in a negative class being incorrectly assigned a positive outcome should both be the same for the protected and unprotected group members. In other words, the protected and unprotected groups should have equal rates for true positives and false positives.	Mehrabian_Sinauer								
equality of opportunity	(Equal opportunity) We say that a binary predictor h^* satisfies equal opportunity with respect to a bias T if $\Pr(h^*(X) = 1 A = 0, Y = 1) = \Pr(h^*(X) = 1 A = 1, Y = 1)$.	hardt_equality_2008	The probability of a person in positive class being assigned to a positive outcome should be equal for both protected and unprotected group members. In other words, the protected and unprotected groups should have equal true positive rates.	Mehrabian_Sinauer								
error	The difference between the observed value of an index and its "true" value. Errors may be random or systematic. Random errors are generally referred to as "errors". Systematic errors are called "biases".	OECD	Difference between a computed, observed, or measured value or condition and the true, specified, or theoretically correct value or condition.	IEEE_Soft_Vocab	measured quantity value minus a reference quantity value	aimc_measurement_2022, citing ISO/IEC Guide 99						

	Terms	Definition 1	Citation 1 [1]	Definition 2	Citation 2	Definition 3	Citation 3	Definition 4	Citation 4	Definition 5	Citation 5	Related terms and synonyms [2]	Legal definition applicable
	error propagation	the way in which uncertainties in the variables affect the uncertainty in the calculated results.	Dorf_2008									propagation of uncertainty; propagation of error	
	ethics	definition 1a: "a set of moral principles: a theory or system of moral values"; definition 1b: "the principles of conduct governing an individual or a group"; definition 1c: "a consciousness of moral importance"; definition 1d: "a guiding philosophy"; definition 2: "a set of moral issues or aspects (such as rightness)"; definition 3: "the discipline dealing with what is good and bad and with moral duty and obligation"	Merriam-Webster_ethics	n. the branch of philosophy that investigates both the content of moral judgments (i.e., what is right and what is wrong) and their nature (i.e., whether such judgments should be considered objective or subjective). The study of the first type of question is sometimes termed normative ethics and that of the second metaethics. Also called moral philosophy. 2. the principles of morally right conduct accepted by a person or a group or considered appropriate to a specific field. In psychological research, for example, proper ethics requires that participants be treated fairly and without harm and that investigators report results and findings honestly. See code of ethics; professional ethics; research ethics. –ethical adj.	APA_ethics								
	ethics by design	An approach to technology ethics and a key component of responsible innovation that aims to integrate ethics in the design and development stage of the technology. Sometimes formulated as "embedding values in design," similar terms are "value-sensitive design" and "ethically aligned design."	AI_Ethics_Mark_Coeckelberg										
	evaluation	(i) systematic determination of the extent to which an entity meets its specified criteria; (2) action that assesses the value of something	aimc_mearnsment_2022, citing ISO/IEC 24763									Test, Evaluation, Verification, and Validation (TEVV)	
	evasion	In Evasion Attacks, the adversary solves a constrained optimization problem to find a small input perturbation that causes a large change in the loss function and results in output misclassification.	tabassi_adversarial_2019										
	example	definition 1 "one that serves as a pattern to be imitated or not to be imitated"; definition 3 "one that is representative of all of a group or type"; definition 4 "a parallel or closely similar case especially when serving as a precedent or model"; definition 5: "an instance (such as a problem to be solved) serving to illustrate a rule or precept or to act as an exercise in the application of a rule"	Merriam-Webster_exam										
	exception	An event that occurs during the performance of the process that causes a diversion from the normal flow of the process. Exceptions are generated by an unanticipated event within a process due to an undefined or unknown input, undefined or unexpected outcome, or unforeseen sequencing of a task or event.	IEEE_Guide_1PA										
	execute	To carry out a plan, a task command, or another instruction	SP001	To carry out an instruction, process, or computer program; directing, managing, performing, and accomplishing the project work, providing the deliverables, and providing work performance information.	IEEE_Soft_Vocab								
	executive	one that exercises administrative or managerial control	Merriam-Webster_executive										
	ex-nomination	Ex-nomination is the harm of eliminating social identity by almost ignoring its existence. This term comes from Barthes where he coined it to describe what the bourgeoisie do to hide their name and identity by not referring to themselves as such to naturalize bourgeois ideology. This can show up in some of the same examples as mentioned above, as ex-nomination can present itself in technology not recognizing a certain class of people with facial recognition technology or by having implicit biases towards certain adjectives to describe certain classes	Blank_Abigayle_Le										
	experiment	a series of observations conducted under controlled conditions to study a relationship with the purpose of drawing causal inferences about that relationship. An experiment involves the manipulation of an independent variable, the measurement of a dependent variable, and the exposure of various participants to one or more of the conditions being studied. Random selection of participants and their random assignment to conditions also are necessary in experiments.	apa_experiment_2023	A study of a fundamental physical process by the use of one or more computer simulators. Like empirical experiments, input variables (factors) are systematically changed to assess their impact upon simulator outputs (responses). Unlike empirical experiments, the simulator responses are deterministic, and this has implications: Computer experiments can appropriately have their factors with intermediate levels and the scope, especially the number of runs, can be more ambitious. Further, modeling methods based on interpolators (especially kriging) emerge as a viable approach. Good practice is to use Latin hypercubes for computer experiments, and advanced nonparametric modeling methods such as kriging, neural networks, and multivariate adaptive regression splines (MARS) in the data analysis stage. Important applications of computer experimental methods are for determining process optima and for evaluating process tolerances.	nist_statistics_2002								
	expert system	A form of AI that attempts to replicate a human's expertise in an area, such as medical diagnosis. It combines a knowledge base with a set of hand-coded rules for applying that knowledge. Machine-learning techniques are increasingly replacing hand-coding.	Hinton_Matthew	Intelligent computer program that uses knowledge and inference procedures to solve problems that are difficult enough to require significant human expertise for their solution.	Remsik_Leon	An expert system is an intelligent computer program that uses knowledge and inference procedures to solve problems that are difficult enough to require significant human expertise for their solution.	OECD	Computer system that provides for expertly solving problems in a given field or application area by drawing inferences from a knowledge base developed from human expertise.	IEEE_Soft_Vocab	A computer system emulating the decision-making ability of a human expert through the use of reasoning, leveraging an encoding of domain-specific knowledge most commonly represented by sets of if-then rules rather than procedural code. The term "expert system" was used largely during the 1970s and 80s amidst great enthusiasm about the power and promise of rule-based systems that relied on a "knowledge base" of domain-specific rules and rule-chaining procedures that map observations to conclusions or recommendations.	NSCAI		
	expertise	The accumulation of specialized knowledge is often called expertise. Postrise expertise is a type of knowledge-based specialization that arises from experiences in life and one's position in a society or culture. Formal expertise is the result of a self-selection of a domain of knowledge that is mastered deliberately and for which there are clear benchmarks of success.	Schneider_McGrew_Jin_Fan again_McMahon_2018										
	explainability	The ability to provide a human interpretable explanation for a machine learning prediction and produce insights about the causes of decisions, potentially to line up with human reasoning	NISTIR_8269_Draft	Within the context of AI, the extent to which AI decisioning processes and outcomes are reasonably understood.	Comptroller_O'Flue	The ability to explain or be explained. In the context of ethics, it refers to the ability to explain to others why you have done something or why you have made a decision; this is part of what it means to be responsible.	AI_Ethics_Mark_Coeckelberg	A characteristic of an AI system in which there is provision of accompanying evidence or reasons for system output in a manner that is meaningful or understandable to individual users (as well as to developers and auditors) and reflects the system's process for generating the output (e.g., what alternatives were considered, but not proposed, and why not).	NSCAI			interpretability	
	explainable artificial intelligence (XAI)	XAI seeks to make AI more understandable and interpretable, and therefore trustworthy. One of the complaints about artificial intelligence is the lack of transparency in how it operates. Many algorithm developers don't reveal the data that go into applications or how various factors are weighted and analyzed. That leads to a situation where outsiders cannot understand or explain how AI reached the outcome or decision that it did. That lack of explainability can lead people to suspect the worst about AI, and thus not trust AI in general or certain AI applications in particular. XAI seeks to help describe either the overall function of AI or the specific way it reaches decisions.	Brookings_Institution	At that can explain to humans its actions, decisions, or recommendations, or can provide sufficient information about how it came to its result.	AI_Ethics_Mark_Coeckelberg								
	explainer	Functionality for providing details on or causes for fairness metric results.	AI_Fairness_360										
	explanation	Systems deliver accompanying evidence or reasons (if) for all outputs.	NISTIR_8269_Draft	The explanation principle obligates AI systems to supply evidence, support, or reasoning for each output.	NISTIR_8312								
	exploratory	Exploratory Data Analysis (EDA) is an approach/philosophy for data analysis that employs a variety of techniques (mostly graphical) to: 1. maximize insight into a data set; 2. uncover underlying structure; 3. extract important variables; 4. detect outliers and anomalies; 5. test underlying assumptions; 6. develop parsimonious models; and 7. determine optimal factor settings.	nist_statistics_2002										
	external validity	A study has external validity to the degree that its results can be extended (generalized) beyond the limited research setting and sample in which they were obtained	hordern_research_2011	the extent to which the results of research or testing can be generalized beyond the sample that generated them. The more specialized the sample, the less likely will it be that the results are highly generalizable to other individuals, situations, and time periods.	APA_external_validity								
	facial recognition (FR)	A technology for identifying specific people based on pictures or videos. It operates by analyzing features such as the structure of the face, the distance between the eyes, and the angles between a person's eyes, nose, and mouth. It is controversial because of worries about privacy invasion, malicious applications, or abuse by government or corporate entities. In addition, there have been well-documented biases by race and gender with many facial recognition algorithms.	Brookings_Institution	Records the spatial geometry of distinguishing features of the face. Different vendors use different methods of facial recognition, however, all focus on measures of key features of the face.	Woodward	Face recognition algorithms, however, have no built-in notion of a particular person. They are not built to identify particular people; instead they include a face detector followed by a feature extraction algorithm that converts one or more images of a person into a vector of values that relate to the identity of the person. The extractor typically consists of a neural network that has been trained on ID-labeled images available to the developer. In operations, they act as generic extractors of identity-related information from photos of persons they have usually never seen before. Recognition proceeds as a differential operator: Algorithms compare two feature vectors and emit a similarity score. This is a cosine-defined numeric value expressing how similar the parent faces are. It is compared to a threshold value to decide whether two samples are from, or represent, the same person or not. Thus, recognition is mediated by persistent identity information stored in a feature vector (or "template").	NISTIR_8280						
	fair-washing	promoting the false perception that a machine learning model respects some ethical values	shivdny_fairwashing_2019										
	fairness (another entry for "algorithmic fairness")	"cultural assumptions" regarding "the regulation of (human) life effected by stated and unstated rules of interaction; rules that most interactants see as "generally applicable" and "reasonable." (We have to get the full definition from the book...	Anna Wierzbicka, English: Meaning and Culture (Oxford: Oxford University Press, 2006), 152–54										
	fairness metric	A quantification of unwanted bias in training data or models.	AI_Fairness_360	A mathematical definition of "fairness" that is measurable. Some commonly used fairness metrics include: equalized odds predictive parity counterfactual fairness demographic parity Many fairness metrics are mutually exclusive; see incompatibility of fairness metrics.	google_glossary_2023								

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false negative		An example in which the predictive model mistakenly classifies an item as in the negative class.	NISCAI	an outcome where the model incorrectly predicts the negative class.	google_dev_cl authentication- true-false- positive-negative	A false negative is denying an applicant who should be approved	Vandenberg_Kush	1. An instance in which a security tool intended to detect a particular threat fails to do so. 2. Incorrectly classifying malicious activity as benign.	CSBSC_fake_n cysigite				
		An example in which the model mistakenly classifies an item as in the positive class	NISCAI	an outcome where the model incorrectly predicts the positive class.	google_dev_cl authentication- true-false- positive-negative	A false positive is approving an applicant who should be denied	Vandenberg_Kush	1. An alert that incorrectly indicates that a vulnerability is present. 2. An alert that incorrectly indicates that malicious activity is occurring. 3. An instance in which a security tool incorrectly classifies benign content as malicious. 4. Incorrectly classifying benign activity as malicious. 5. An erroneous acceptance of the hypothesis that a statistically significant event has been observed. This is also referred to as a type I error. This is also referred to as a type I error. When "health-testing" the components of a device, it often refers to a declaration that a component has malfunctioned - based on some statistical testing - despite the fact that the component was actually working correctly.	CSBSC_fake_p ositive	Type I error (in statistics)			
fault tolerance		The ability of a system or component to continue normal operation despite the presence of hardware or software faults	SPIR01										
favorable label		A label whose value corresponds to an outcome that provides an advantage to the recipient. The opposite is an unfavorable label.	AI_Fairness_360										
feature		An attribute containing information for predicting the label.	AI_Fairness_360										
feature extraction		a more general method in which one tries to develop a transformation of the input space onto the lowdimensional subspace that preserves most of the relevant information	khalid_feature_2004										
feature importance		how important the feature was for the classification performance of the model; a measure of the individual contribution of the corresponding feature for a particular classifier, regardless of the shape (e.g., linear or nonlinear relationship) or direction of the feature effect	saxeels_feature_2003										
feature shift		Unlike joint distribution shift detection, which cannot localize which features caused the shift, we define a new hypothesis test for each feature individually. Namely, the simplest test would be to check if the marginal distributions have changed for each feature (as explored by [25]); however, the marginal distribution would be easy for an adversary to simulate (e.g., by looping the stored values from a previous day). Thus, marginal tests are not sufficient for our purpose. Therefore, we propose to use conditional distribution tests. More formally, our null and alternative hypothesis for the j-th feature is that its full conditional distribution (i.e., its distribution given all other features) has not shifted for all values of the other features.	kulkarni_feature_2020										
federated learning		a learning model which addresses the problem of data governance and privacy by training algorithms collaboratively without transferring the data to another location	Public_Health_and_Information_MIT_2023										
feedback loop		describes the process of leveraging the output of an AI system and corresponding end-user actions in order to refine and improve models over time. The AI-generated output (predictions or recommendations) are compared against the final decision (for example, to perform work or not) and provides feedback to the model, allowing it to learn from its mistakes.	AI_Feedback_Loop									closed-loop learning	
fitting		Fitting is the process of verifying whether the data item value is in the previously specified interval.	OECD										
firmware		Computer programs and data stored in hardware - typically in read-only memory (ROM) or programmable read-only memory (PROM) - such that the programs and data cannot be dynamically written or modified during execution of the program.	SP800-37	Combination of a hardware device and computer instructions or computer data that reside as read only software on the hardware device.	IEEE_Soft_Vocab								
Forecasting		Estimate or prediction of conditions and events in the project's future based on information and knowledge available at the time of the forecast. The information is based on the project's past performance and expected future performance, and includes information that could impact the project in the future, such as estimate at completion and estimate to complete.	IEEE_Soft_Vocab	Predicting the future as accurately as possible, given all of the information available, including historical data and knowledge of any future events that might impact the forecasts.	Hryndman_Rob								
four-fifths rule		A rule of thumb under which (federal enforcement agencies) will generally consider a selection rate for any race, sex, or ethnic group which is less than four-fifths (4/5ths) or eighty percent (80%) of the selection rate for the group with the highest selection rate as a substantially different rate of selection. ... This "4/5ths" or "80%" rule of thumb is not intended as a legal definition, but is a practical means of keeping the attention of the enforcement agencies on serious discrepancies in rates of hiring, promotion and other selection decisions.	EEOC_Q&A_Selection										
fraud detection		Monitoring the behavior of populations of users in order to estimate, detect, or avoid undesirable behavior.	Kou_Yueping	detecting and recognizing fraudulent activities as they enter systems and report them to a system manager.	Behdad								
fully autonomous		Accomplishes its assigned mission, within a defined scope, without human intervention while adapting to operational and environmental conditions	SPIR01										
generative adversarial network (GAN)		Generative Adversarial Networks, or GANs for short, are an approach to generative modeling using deep learning methods, such as convolutional neural networks. Generative modeling is an unsupervised learning task in machine learning that involves automatically discovering and learning the regularities or patterns in input data in such a way that the model can be used to generate or output new examples that plausibly could have been drawn from the original dataset.	Brownlee_Jason	A pair of jointly trained neural networks that generates realistic fake pictures, say) as the other tries to detect the fakes.	Hutton_Matthew	Generative adversarial networks (GANs) consist of two competing neural networks—a generator network that tries to create fake outputs (such as pictures), and a discriminator network that tries to determine whether the outputs are real or fake. A major advantage of this structure is that GANs can learn from less data than other deep learning architectures.	CRS_AI	NISCAI	An approach to training AI models useful for applications like data synthesis, augmentation, and compression where two neural networks are trained in tandem: one is designed to be a generative network (the forger) and the other a discriminative network (the forger detector). The objective is for each network to train and better itself off the other, reducing the need for big labeled training data.				
generative artificial intelligence		[a kind of artificial intelligence] capable of generating new content such as code, images, music, text, simulations, 3D objects, videos, and so on. It is considered an important part of AI research and development, as it has the potential to revolutionize many industries, including entertainment, art, and design.	Acham_Islam_History_2023	describes algorithms (such as ChatGPT) that can be used to create new content, including audio, code, images, text, simulations, and videos.	McKinsey_generative_AI								
global		[An approach that] strives to understand the model as a whole.	aiun_opportunities_2020	A global explanation produces a model that approximates the non-interpretable model.	NISTIR_8382_Full								
governance		The actions to ensure stakeholder needs, conditions, and options are evaluated to determine balanced, agreed-upon enterprise objectives; setting direction through prioritization and decision-making; and monitoring performance and compliance against agreed-upon directions and objectives. AI governance may include policies on the nature of AI applications developed and deployed versus those limited or withheld.	NISCAI	A framework of policies, rules, and processes for ensuring direction, management, and accountability.	SP170								
graph		Diagram that represents the variation of a variable in comparison with that of one or more other variables. Diagram or other representation consisting of a finite set of nodes and internode connections called edges or arcs.	IEEE_Soft_Vocab	A graph (sometimes called an undirected graph to distinguish it from a directed graph, or a simple graph to distinguish it from a multigraph) is a pair G = (V, E), where V is a set whose elements are called vertices (singular: vertex), and E is a set of paired vertices, whose elements are called edges (sometimes links or lines).	wikipedia_graph_2023								
graphical processing unit (GPU)		A specialized chip capable of highly parallel processing. GPUs are well-suited for running machine learning and deep learning algorithms. GPUs were first developed for efficient parallel processing of arrays of values used in computer graphics. Modern-day GPUs are designed to be optimized for machine learning graphics.	NISCAI										
graphical user interface (GUI)		A GUI is a type of computer human interface on a computer. It solves the blank screen problem that frustrated early computer users. These early users sat down in front of a computer and faced a blank screen, with only a prompt. The computer gave the user no indication what the user was to do next. GUIs are an attempt to solve this blank screen problem. At a conceptual level, a computer human interface is a "means by which people and computers communicate with each other"	james_gui_cal_1998										
ground truth		information provided by direct observation as opposed to information provided by inference	Collins_Dictionary_ground_truth	value of the target variable for a particular item of labeled input data	aimo_measurement_2002_citing ISO/JTC 22989	In most accounts of supervised (machine) learning, the ground truth is considered to be the "dependent variable" that is predicted by a collection of features (independent variables)	Muller_Michael						
group fairness		The goal of groups defined by protected attributes receiving similar treatments or outcomes.	AI_Fairness_360	Treat different groups equally	Mehrabi_Ninareh								
hacker		Unauthorized user who attempts to or gains access to an information system.	Renzali_Leon	Technically sophisticated computer enthusiast who uses his or her knowledge and means to gain unauthorized access to protected resources.	IEEE_Soft_Vocab								
hallucination		generated content that is nonsensical or unfaithful to the provided source content[...]; there are two main types of hallucinations, namely intrinsic hallucination and extrinsic hallucination. (So intrinsic hallucination is a) generated output that contradicts the source content; (an extrinsic hallucination is a) generated output that cannot be verified from the source content (i.e., output can neither be supported nor contradicted by the source).	Survey_of_Hallucination_in_NLG	When a bot confidently says something that is not true.	Liam_Tung_2022_Meta_hallucination								
hardware		Physical equipment used to process, store, or transmit computer programs or data	IEEE_Soft_Vocab										
harm		An undesired outcome [whose] cost exceeds some threshold[...]; the key points in the definition of safety are that: costs have to be sufficiently high in some human sense for events to be harmful; and that safety involves reducing both the probability of expected harms and the possibility of unexpected harms.	Engineering_safety_in_machine_learning	to damage, injure or hurt.	Black's_Law_Dictionary_harm								
harmful bias		Harmful bias can be either conscious or unconscious. Unconscious, also known as implicit bias, involves associations outside conscious awareness that lead to a negative evaluation of a person on the basis of characteristics such as race, gender, sexual orientation, or physical ability.134 Discrimination is behavior, discriminatory actions perpetrated by individuals or institutions refer to iniquitous treatment of members of certain social groups that results in social advantages or disadvantages	humphrey_addressing_2020										
harms of allocation		unfairly assigned opportunities or resources due to algorithmic intervention[...]; when a system (distributed) or withholds certain groups an opportunity or a resource. [They are] immediate, easily quantifiable, discrete, and transactional.	Lim_Swee_Kiat_harms										

Terms	Definition 1	Citation 1 [1]	Definition 2	Citation 2	Definition 3	Citation 3	Definition 4	Citation 4	Definition 5	Citation 5	Related terms and synonyms [2]	Legal definition applicable
in silico	carrying out some experiment by means of a computer simulation	World_Wide_Web;_In_all_co									computer simulation testing	
instance	Discrete, bounded thing with an intrinsic, immutable, and unique identity. Individual occurrence of a type	IEEE_Soft_Vo;_cab;_AI_Fairness_360	A single object of the world from which a model will be learned, or on which a model will be used (e.g., for prediction).	Kohavi_Ron								
instance weight	A numerical value that multiplies the contribution of a data point in a model.											
integrity	Degree to which a system, product, or component prevents unauthorized access to, or modification of, computer programs or data.	IEEE_Soft_Vo;_cab	Guarding against improper information modification or destruction, and includes ensuring information non-repudiation and authenticity.	CSRC	The property whereby information, an information system, or a component of a system has not been modified or destroyed in an unauthorized manner.	CISA	<data> property whereby data have not been altered in an unauthorized manner since they were created, transmitted, or stored; <system> property of accuracy and completeness	ISO/IEC_TS_5723:2022(en)	the quality of moral consistency, honesty, and truthfulness with oneself and others.	APA_integrity		
intelligent process automation	A preconfigured software instance that combines business rules, experience-based content determination logic, and decision criteria to initiate and execute multiple interrelated human and automated processes in a dynamic context. The goal is to complete the execution of a combination of processes, activities, and tasks in one or more unrelated software systems that deliver a result or service with minimal or no human intervention.	IEEE_Guide_1PA										
interaction	Action that takes place with the participation of the environment of the object.	IEEE_Soft_Vo;_cab										
internal validity	The ability of your research design to adequately test your hypotheses	bordens_research_2010	the degree to which a study or experiment is free from flaws in its internal structure and its results can therefore be taken to represent the true nature of the phenomenon. In other words, internal validity pertains to the soundness of results obtained within the controlled conditions of a particular study, specifically with respect to whether one can draw reasonable conclusions about cause-and-effect relationships among variables.	APA_internal_validity								
interoperability	The ability of software or hardware systems or components to operate together successfully, with minimal effort by end user	SP1001	Degree to which two or more systems, products or components can exchange information and use the information that has been exchanged.	IEEE_Soft_Vo;_cab	The ability for tools to work together in execution, communication, and data exchange under specific conditions.	NIST_5000						
interpretability	The ability to understand the value and accuracy of system output. Interpretability refers to the extent to which a cause and effect can be observed within a system or to which what is going to happen given a change in input or algorithmic parameters can be predicted.	NSCAI	The ability to explain or to present an ML model's reasoning in understandable terms to a human	IEEE_Soft_Vo;_cab;_aimc_measure;_ment_2022;_citing;_Machine_Learning_Closure_By_Google						explainability		
interpretable model	An interpretable machine learning model obeys a domain-specific set of constraints to allow it (or its predictions, or the data) to be more easily understood by humans. These constraints can differ dramatically depending on the domain.	rudin_interpretable_2022										
intervenable	the property that intervention is possible concerning all ongoing or planned (privacy) relevant data processing; [...] the data subjects themselves should be able to intervene with regards to the processing of their own data ... [to ensure] that data subjects have the ability to control how their data is processed and by whom.	Covert_et_al										
kill switch	a form of safety mechanism used to completely shut off a device in case of an emergency situation where it cannot be shut off using the normal process or if immediate shut off is required.	Techopedia_kill_switch										
knowledge	The sum of all information derived from diagnostic, descriptive, predictive, and prescriptive analytics embedded in or available to or from a cognitive computing system.	IEEE_Guide_1PA	artificial intelligence- abstracted information about objects, events, concepts or rules, their relationships and properties, organized for goal-oriented systematic use.	aimc_measure;_ment_2022;_citing;_ISO/IEC_22809								
label	A value corresponding to an outcome.	AI_Fairness_360	target variable assigned to a sample	aimc_measure;_ment_2022;_citing;_ISO/IEC_22809								
label shift	Under label shift, the label distribution p(y) might change but the class-conditional distributions p(x y) do not. ... We work with the label shift assumption, i.e., p(x y) ~ p(x y)	saurabh_label_2020										
large language model (LLM)	a class of language models that use deep-learning algorithms and are trained on extremely large textual datasets that can be multiple terabytes in size. LLMs can be classed into two types: generative or discriminative. Generative LLMs are models that output text, such as the answer to a question or even writing an essay on a specific topic. They are typically unsupervised or semi-supervised learning models that predict what the response is for a given task. Discriminatory LLMs are supervised learning models that usually focus on classifying text, such as determining whether a text was made by a human or AI.	AI_Assurance_2022								language model		
language model	A language model is an approximative description that captures patterns and regularities present in natural language and is used for making assumptions on previously unseen language fragments.	Gustavi_Ebba									large language model (LLM)	
learning	A procedure in artificial intelligence by which an artificial intelligence program improves its performance by gaining knowledge.	Dennis_Merca	the acquisition of novel information, behaviors, or abilities after practice, observation, or other experience, as evidenced by change in behavior, knowledge, or brain function. Learning involves consciously or nonconsciously attending to relevant aspects of incoming information, internally organizing the information into a coherent cognitive representation, and integrating it with relevant existing knowledge activated from long-term memory.	APA_learning								
least privilege	The principle that a security architecture should be designed so that each entity is granted the minimum system resources and authorizations that the entity needs to perform its function.	CSRC	The security objective of granting users only those access they need to perform their official duties.	SP-800-12								
lemmatization	the process of grouping together the different inflected forms of a word so they can be analyzed as a single item.	Arianancher_John;_AI;_with_Python;_dataiku;_ML;_and;_linear;_models	in natural language processing, [...] working with words according to their root lexical components	Techopedia_lemmatization	grouping together words with the same root or lemma but with different inflections or derivatives of meaning so they can be analyzed as one item.	Techdang_lemmatization	the grouping together of different forms of the same word.	TechTarget_lemmatization				
linear model	[a supervised learning algorithm that uses] a simple formula to find a best-fit line through a set of data points.		(linear) An operator L ~ is said to be linear if, for every pair of functions f and g and scalar t, L ~ (t*f + (1-t)*g) = t*(L ~ f) + (1-t)*(L ~ g) and L ~ (f)*t = t*(L ~ f).	wolfram_mathworld_2022								
local	Mainly focus on explanation of individual data instances. Generates one explanation map g per data x in X.	arun_opportunities_2020	A local explanation explains a subset of decisions or is a per-decision explanation.	NISTIR_832_Full								
localization	Creation of a national or specific regional version of a product.	IEEE_Soft_Vo;_cab;_wolfram_mathworld_2022										
logistic model	(logistic equation) The continuous version of the logistic model is described by the differential equation (dN)/(dt) = rN(1 - N/K), (1) where r is the Malthusian parameter (rate of maximum population growth) and K is the so-called carrying capacity (i.e., the maximum sustainable population). Dividing both sides by K and defining v = N/K then gives the differential equation (dH)/(dt) = r*(1 - H), (2) which is known as the logistic equation and has solution H(t) = 1/(1 + exp(-r*(t - t_0))). (3) The function H(t) is sometimes known as the sigmoid function.											
machine learning	A general approach for determining models from data.	AI_Fairness_360	Machine Learning is the study of computer algorithms that improve automatically through experience.	Mitchell_Tom	Machine learning is based on algorithms that can learn from data without relying on rules-based programming	Pyle_and_San_Jose	The study or the application of computer algorithms that improve automatically through experience. Machine learning algorithms build a model based on training data in order to perform a specific task, like adding in prediction or decision-making processes, without necessarily being explicitly programmed to do so	NSCAI	A subcategory of artificial intelligence, a method of designing a sequence of actions to solve a problem that organizes automatically through experience and with limited or no human intervention.	Comptroller_Office		
machine observation	Machine detection and interpretation of relevant and meaningful events and conditions that impact operation of the computer system itself or other dependent mechanisms or processes essential to the purpose of the system. See bad actor.	IEEE_Guide_1PA										
malicious actor	Hardware, firmware, or software that is intentionally included or inserted in a system for a harmful purpose.	Reznik_Leon	Software that compromises the operation of a system by performing an unauthorized function or process.	CISA						trojan horse		
materiality	Refers to the significance of a matter in relation to a set of financial or performance information. If a matter is material to the set of information, then it is likely to be of significance to a user of that information.	OECD										
McNamara fallacy	presum[ing] that (A) quantitative modes of reality are always more accurate than other modes; (B) the quantitative measurements that can be made must really must be the most relevant; and (C) factors other than those currently being used in quantitative metrics must either not exist or not have a significant influence on success. This flawed approach to reasoning is also known as the quantitative fallacy.	McNamara_Ralphy								quantitative fallacy		
measurement	(Quantitative) (1) act or process of assigning a number or category to an entity to describe an attribute of that entity; (2) assignment of numbers to objects in a systematic way to represent properties of the object; (3) use of a metric to assign a value (e.g., a number or category) from a scale to an attribute of an entity; (4) set of operations having the object of determining a value of a measure; (5) assignment of values and metrics to aspects of software engineering work products, processes, and resources plus the models that are derived from them, whether these models are developed using statistical or other techniques; (6) figure, extent, or amount obtained by measuring	aimc_measure;_ment_2022;_citing;_ISO/IEC_24765	(Qualitative) (1) a way of learning about social reality [...] That uses approaches [...] to explore, describe, or explain social phenomena[]; unpack the meaning people ascribe to activities, situations, events, or [...] artifacts[]; build a depth of understanding about some aspect of social life; build "thick descriptions" (see Clifford Geertz, 1973) of people in naturalistic settings; explore new or under-researched areas; or make micro-macro links (illuminate connections between individuals-group and institutional and/or cultural contexts) (2) approaches that can make visible and unpack the mechanisms which link particular variables, by looking at the explanations, or accounts, provided by those involved.	Leary_CHQRC_Intro	Qualitative measurement engages research methods and techniques to provide information about the nature of phenomenon. Qualitative methods are designed for systematic collection, organization, description and interpretation of non-numerical (textual, verbal or visual) data (Hammerberg et al., 2003). Qualitative measurement generally answers questions about why, for whom, when, and how something is (or is not) observed, whereas quantitative measurement answers questions about what is observed. Elements assessed using qualitative measurement may include contextual norms or meaning, socio-cultural dynamics, individual or collective beliefs, and complex multi-component interactions or interventions (Buenetto et al., 2020).	Hammerberg_2006;_Buenetto_2020	Documentation of assumptions and methods used is a foundational element of qualitative measurement, as the choice of single or combined methods is made based on the phenomenon and its context (Buenetto & Gregory, 2003). When appropriately paired, qualitative and quantitative measurement can provide corroboration or elaboration, demonstrate use cases, and/or identify conditions for complementarity or contradiction (Branen, 2005).	Buenetto_2003;_Branen_2005				

Terms	Definition 1	Citation 1 [1]	Definition 2	Citation 2	Definition 3	Citation 3	Definition 4	Citation 4	Definition 5	Citation 5	Related terms and synonyms [2]	Legal definition applicable
precision	A metric for classification models. Precision identifies the frequency with which a model was correct when classifying the positive class.	NSCAI	closeness of agreement between indications or measured quantity values obtained by replicate measurements on the same or similar objects under specified conditions	aine_measure ment_2022, citing ISO/IEC Guide 99	A metric for classification models. Precision identifies the frequency with which a model was correct when predicting the positive class. That is, Precision = True Positive / (True Positive + False Positive)	aine_measure ment_2022, citing Machine Learning Glossary by Google	Closeness of agreement between independent test results obtained under prescribed conditions. It is generally dependent on analyst concentration, and this dependence should be determined and documented. The measure of precision is usually expressed in terms of imprecision and computed as a standard deviation of the test results. Higher imprecision is reflected by a larger standard deviation. Independent test results means results obtained in a manner not influenced by any previous results on the same or similar material. Precision covers repeatability and reproducibility [29]. Alternatively, precision is a measure for the reproducibility of measurements within a set, that is, of the scatter or dispersion of a set about its central value. Precision depends only on the distribution of random errors and does not relate to the true value or specified value.	UNCODC_Gloss ary_QA_CIP2				
prediction	Forecasting quantitative or qualitative outputs through function approximation, applied on input data or measurements.	NSCAI	primary output of an AI system when provided with input data or information	aine_measure ment_2022, citing ISO/IEC 22989								
predictive analysis	The organization of analyses of structured and unstructured data for inference and correlation that provides a useful predictive capability to new circumstances or data.	IEEE_Guide_1 PA										
predictive analytics	Insights, reporting, and information answering the question, "What is likely to happen?" Predictive analytics support high confidence foretelling of future event (s).	IEEE_Guide_1 PA										
preprocessing	Transforming the data so that the underlying discrimination is mitigated. This method can be used if a modeling pipeline is allowed to modify the training data.	SP1270	Techniques that try to transform the data so the underlying discrimination is removed. If the algorithm is allowed to modify the training data, then pre-processing can be used.		Mehrabi, _Nisarah							
prescriptive analytics	Insights, reporting, and information answering the question, "What should I do about it?" Prescriptive analytics determine information that provides high confidence actions necessary to recover from an event or fulfill a need.	IEEE_Guide_1 PA										
privacy	freedom from intrusion into the private life or affairs of an individual	ISO/IEC_TS_5723:2022(en)	freedom from intrusion into the private life or affairs of an individual when that individual	aine_measure ment_2022, citing ISO/IEC TR 24029-1								
privacy-by-design	Embedding privacy measures and privacy enhancing technologies directly into the design of information technologies and systems.	ENISA									https://ec.europa.eu/digital-story/content/ENIS/71122_en?cid=123%2020080607&utm_source=google&utm_medium=organic&utm_campaign=ENIS1488243431	
privacy-enhancing technology	A coherent system of ICT (Information and Communications Technology) measures that protects privacy by eliminating or reducing personal data or by preventing unnecessary and/or undesired processing of personal data, all without losing the functionality of the information system.	PET_Handbook										
privileged protected attribute	A value of a protected attribute indicating a group that has historically been at systematic advantage.	AI_Fairness_3 60										
procedure	Information item that presents an ordered series of steps to perform a process, activity, or task.	IEEE_Soft_Vocab										
process	A sequence or flow of activities in an organization with the objective of carrying out work, which may include a set of activities, events, tasks, and decisions in a sequenced flow that adhere to finite execution semantics. Process levels will generally follow structure at the capability maturity model integration (CMMI) level.	IEEE_Guide_1 PA	Set of interrelated or interacting activities that transforms inputs into outputs	IEEE_Soft_Vocab								
process flow	The defined representation of the overall progression of how a process is intended to be performed, including all exceptions.	IEEE_Guide_1 PA										
processing	"Processing" means any operation or set of operations which is performed on personal data or on sets of personal data, whether or not by automated means, such as collection, recording, organisation, structuring, storage, adaptation or alteration, retrieval, consultation, use, disclosure by transmission, dissemination or otherwise making available, alignment or combination, restriction, erasure or destruction.	GDPR	"Processing" means any operation or set of operations that are performed on personal information or on sets of personal information, whether or not by automated means.	CCPA						personal data; processing		
processing environment	the combination of software and hardware on which the Application runs.	Law_Insider_processing_environment										
processor	"Processor" means a natural or legal person, public authority, agency or other body which processes personal data on behalf of the controller.	GDPR	"Processing" means any operation or set of operations that are performed on personal information or on sets of personal information, whether or not by automated means.	CCPA						personal data; processing controller		
product manager	a specialized product management professional whose job is to manage the planning, development, launch, and success of products/solutions powered by AI, machine learning, and deep learning technologies.	productmanagement_koh_Fefferter										
product owner	[person who is] focused on providing direction and prioritization for the cross-functional AI team, ensuring everyone remains focused on the overall vision and road map. This role is responsible for unifying individuals with diverse skills and backgrounds toward a common goal.	Forbes_Tracy Kemp										
product velocity	how fast a product can be delivered to the market	Cost_Management_chris Towards_Productivity										
production	[turning the best performing model] into an actual "data product," ready to be used in live services.											
profiling	"Profiling" means any form of automated processing of personal data consisting of the use of personal data to evaluate certain personal aspects relating to a natural person. In particular to analyse or predict aspects concerning that natural person's performance at work, economic situation, health, personal preferences, interests, reliability, behaviour, location or movements.	GDPR	"Profiling" means any form of automated processing of personal information, as further defined by regulations pursuant to paragraph (8) of subordination (a) of Section 778.85, to evaluate certain personal aspects relating to a natural person and in particular to analyse or predict aspects concerning that natural person's performance at work, economic situation, health, personal preferences, interests, reliability, behavior, location, or movements.	CCPA	Measuring the characteristics of expected activity so that changes to it can be more easily identified.	CSRC				personal data; processing		
protected attribute	An attribute that partitions a population into groups whose outcomes should have parity. Examples include race, gender, caste, and religion. Protected attributes are not universal, but are application specific.	AI_Fairness_3 60										
protected class	[a feature] that may not be used as the basis for decisions [and] could be chosen because of legal mandates or because of organizational values. Some common protected [classes] include race, religion, national origin, gender, marital status, age, and socioeconomic status.	MIT_Protected_Attributes	A group of people with a common characteristic who are legally protected from discrimination on the basis of that characteristic. Protected classes are created by both federal and state law.		Practical_Law_protected_classes							
prototype	A prototype is an original model constructed to include all the technical characteristics and performances of the new product.	OECD										
provisioning	The granting of access rights and executional privilege to an agent (human or machine) within an application(s) or system(s).	IEEE_Guide_1 PA										
proxy	A variable that can stand in for another, usually not directly observable or measurable, variable.	SP1270										
proxy discrimination	a particularly pernicious subset of disparate impact. Like all forms of disparate impact, it involves a facially neutral practice that disproportionately harms members of a protected class. But a practice producing a disparate impact only amounts to proxy discrimination when a second condition is met. In particular, proxy discrimination requires that the usefulness to the discriminator of a facially neutral practice derives, at least in part, from the very fact that it produces a disparate impact. This condition can be met either when the discriminator intends to disparately impact a protected group or when a legally-prohibited characteristic is predictive of the discriminator's goals in ways that cannot be captured more directly by non-suspect data.	Proxy_Discrimination							A variable V in a causal graph exhibits unresolved discrimination if there exists a directed path from A to V that is not blocked by a resolving variable, and V itself is non-resolving.	Mehrabi, _Nisarah (this definition is quite technical, though)		
pseudo-anonymization (pseudonymization)	"Pseudonymisation" means the processing of personal data in such a manner that the personal data can no longer be attributed to a specific data subject without the use of additional information, provided that such additional information is kept separately and is subject to technical and organizational measures to ensure that the personal data are not attributed to an identified or identifiable natural person.	GDPR	"Pseudonymise" or "Pseudonymization" means the processing of personal information in a manner that renders the personal information no longer attributable to a specific consumer without the use of additional information, provided that the additional information is kept separately and is subject to technical and organizational measures to ensure that the personal information is not attributed to an identified or identifiable consumer.	CCPA	A data management technique to strip identifiers linking data to an individual.	NSCAI				personal data; processing		
pseudoscience	a system of theories, assumptions, and methods erroneously regarded as scientific	Merriam-Webster_pseudoscience										
quality	The totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs.	OECD	<data> degree to which the characteristics of data satisfy stated and implied needs when used under specified conditions; <system> degree to which a set of inherent characteristics of an object fulfills requirements (an object can be a product, process or service)	ISO/IEC_TS_5723:2022(en)								
racialized	A socio-political process by which groups are ascribed a racial identity, whether or not members of the group self-identify as such	AAAS_Mandl_Bian_2022-09										
ranking	a type of machine learning that sorts data in a relevant order[; often used by companies] to optimize search and recommendations.	DEV_ranking	position, order, or standing within a group : RANK		Merriam-Webster_ranking							

	Term	Definition 1	Citation 1 [1]	Definition 2	Citation 2	Definition 3	Citation 3	Definition 4	Citation 4	Definition 5	Citation 5	Related terms and synonyms [2]	Legal definition applicable
	straight-through processing (STP)	The successful execution of a service, process, or transaction performed entirely through traditional application platforms with predefined interfaces (i.e., application programming interfaces (API)).	IEEE_Guide_1 PA										
	strawperson	a fallacious argument which irrelevantly attacks a position that appears similar to, but is actually different from, an opponent's position, and concludes that the opponent's real position has thereby been refuted.	Hughes_Laver y_Critical_Thi sArguing										
	stress test	Type of performance efficiency testing conducted to evaluate a test item's behavior under conditions of loading above anticipated or specified capacity requirements, or of resource availability below minimum specified requirements.	IEEE_Soft_Vo cab										
	strong AI	AI that is capable of solving almost all tasks that humans can solve	Shewlin_et_al _2009	At AI as is smart and well-rounded as a human. Some say it's impossible. Current AI is weak, or narrow. It can play chess or drive but not both, and lacks common sense.	Hutson,_Matthew							artificial general intelligence (AGI)	
	structured data sub-process	Data that has a predefined data model or is organized in a predefined way. A subordinate process that can be included within a parent process. It can be present and/or repeated within other parent processes.	NIST_1500 IEEE_Guide_1 PA										
	supervised learning	A type of machine learning in which the algorithm compares its outputs with the correct outputs during training. In unsupervised learning, the algorithm merely looks for patterns in a set of data.	Hutson,_Matthew	Algorithms, which develop a mathematical model from the input data and known desired outputs.	Brenzik,_Leon	For a computer to process a set of data whose attributes have been divided into two groups and derive a relationship between the values of one and the values of the other. These two groups are sometimes called predictor and targets, respectively. In statistical terminology, they are called independent and dependent variables. Respectively, the learning is "supervised" because the distinction between the predictors and the target variables is chosen by the investigator or some other outside agency.	Raynor	a general subset of machine learning in which data, like its associated labels, is used to train models that can learn or generalize from the data to make predictions, preferably with a high degree of certainty.	Saksh_Akhalaha _ML_in_Biote ch				
	support vector machines	A supervised machine learning model for data classification and regression analysis. One of the most used classifiers in machine learning. It optimizes the width of the gap between the points of separate categories in feature space.	Rumscchaert,_Erik										
	surveillance	An outcome of establishing information infrastructure as the basis for administration, production, marketing, entertainment and law enforcement[... involving] gathering personal data for a variety of purposes in a quest for greater efficiency, convenience or safety. Its ethics and politics are inherently ambiguous, but at the same time surveillance is never neutral.	David_Lyon_2 007										
	system	combination of interacting elements organized to achieve one or more stated purposes	ISO/IEC_TS_17232(2022)en										
	systemic bias	Systemic biases result from procedures and practices of particular institutions that operate in ways which result in certain social groups being disadvantaged or favored and others being disadvantaged or devalued. This need not be the result of any conscious prejudice or discrimination but rather of the jury following existing rules or norms.	In Chandler and R. Munday. A Dictionary of Media and Communication n. Oxford University Press Jan. 2011 publication Title: A Dictionary of Media and Communication n										
	system of systems	set of systems and system elements that interact to provide a unique capability that none of the constituent systems can accomplish on its own (note: can be necessary to facilitate interaction of the constituent systems in the system of systems)	ISO/IEC_TS_17232(2022)en										
	talent acquisition	the process of finding and acquiring skilled human labor for organizational needs and to meet any labor requirement.	UMMAE										
	target	a method for solving a problem that an AI algorithm parses its training data to find. Once an algorithm finds its target function, that function can be used to predict results (predictive analysis). The function can then be used to find output data related to inputs for real problems where, unlike training sets, outputs are not included.	TecTarget_ta rget_function									target variable, target value	
	task	The performance of a discrete activity with a defined start, stop, and outcome that cannot be broken down to a finer level of detail.	IEEE_Guide_1 PA	Required, recommended, or permissible action, intended to contribute to the achievement of one or more outcomes of a process	IEEE_Soft_Vo cab	Set of activities undertaken in order to achieve a specific goal	aimc_measure ment_2022, citing ISO/IEC TR 24630						
	taxonomy	Taxonomy refers to classification according to presumed natural relationships among types and their subtypes.	OECD										
	tech-washing	the practice of slapping a trendy, new label on legacy solutions.	Forbes_Kayva n_Akhalaha										
	technical control	Security controls (i.e., safeguards or countermeasures) for an information system that are primarily implemented and executed by the information system through mechanisms contained in the hardware, software, or firmware components of the system.	NIST_SP_800-30_Rev_1										
	technochauvinism	The belief that technology is always the solution	M. Boursard, Artificial Intelligence: How Computers Misunderstand the World. MIT Press, 2018.									techno-solutionism	
	techno-solutionism	See technochauvinism.											
	test	Technical operation to determine one or more characteristics of or to evaluate the performance of a given product, material, equipment, organism, physical phenomena, process or service according to a specified procedure.	UNODC_Gloss ary_QA_CLP	any activity aimed at evaluating an attribute or capability of a program or system and determining that it meets its required results.	William_Hetze l	(f) activity in which a system or component is executed under specified conditions, the results are observed or recorded, and an evaluation is made of some aspect of the system or component; (2) to conduct an activity as in (f); (3) set of one or more test cases and procedures.	aimc_measure ment_2022, citing ISO/IEC 24765	the process of executing a program with the intent of finding errors.	The_Art_of_S oftware_Test ing			Test, Evaluation, Verification and Validation (TEVV)	
	Test and Evaluation, Verification and Validation (TEVV) third party	A framework for assessing, incorporating methods and metrics to determine that a technology or system satisfactorily meets its design specifications and requirements, and that it is sufficient for its intended use. an entity that is involved in some way in an interaction that is primarily between two other entities. [Please see note, especially regarding NIST CSRC terms that we might incorporate into this definition.]	NSCAI_Report TecTarget_th ird_party										
	threat actor	See bad actor.											
	three lines of defense	Most financial institutions follow a three-lines-of-defense model, which separates front-line groups, which are generally accountable for business risks (the First Line), from other risk oversight and independent challenge groups (the Second Line) and assurance (the Third Line).	AIBIS_Penn										
	traceability	Ability to trace the history, application or location of an entity by means of recorded identification. ["Chain of custody" is a related term.] Alternatively, traceability is a property of the result of a measurement or the value of a standard whereby it can be related with a stated uncertainty, to stated references, usually national or international standards, i.e. through an unbroken chain of comparisons. In this context, The standards referred to here are measurement standards rather than written standards.	UNODC_Gloss ary_QA_CLP	A characteristic of an AI system enabling a person to understand the technology, development processes, and operational capabilities (e.g., with transparent and auditable methodologies along with documented data sources and design procedures).	NSCAI								
	training data	A dataset from which a model is learned.	AI_Fairness_3 60	a sample from a population of possible examples, and the statistical similarities of each class extracted, or more precisely the significant differences between classes are found.	Papley,_Brian	samples for training used to fit a machine learning model	aimc_measure ment_2022, citing ISO/IEC 22589						
	transaction	Enactment of a process represented by a set of coordinated activities carried out by multiple systems and/or participants in accordance with defined relationships. This coordination leads to an intentional, consistent, and verifiable result across all participants.	IEEE_Guide_1 PA										
	transfer learning	A technique in machine learning in which an algorithm learns to perform one task, such as recognizing cars, and builds on that knowledge when learning a different but related task, such as recognizing cats.	Hutson,_Matthew										
	transformer	A procedure that modifies a dataset.	AI_Fairness_3 60										
	transparency	<information> open, comprehensive, accessible, clear and understandable presentation of information- <systems> property of a system or process to imply openness and accountability	ISO/IEC_TS_17232(2022)en	Understanding the working logic of the model.	NISTIR_8269 Draft	<organization> property of an organization that appropriate activities and decisions are communicated to relevant stakeholders (3.5.13) in a comprehensive, accessible, and understandable manner Note 1 to entry: Inappropriate communications of activities and decisions can violate security, privacy or confidentiality requirements.	iso_22989_20 22	<system> property of a system that appropriate information about the system is made available to relevant stakeholders (3.5.13) Note 1 to entry: Appropriate information for system transparency can include aspects such as features, performance, limitations, components, procedures, measures, design goals, design choices and assumptions, data sources and labelling protocols. Note 2 to entry: Inappropriate disclosure of some aspects of a system can violate security, privacy or confidentiality requirements.	iso_22989_20 22				
	trojan horse	A computer program that appears to have a useful function, but also has a hidden and potentially malicious function that evades security mechanisms, sometimes by exploiting legitimate authorizations of a system entity that invokes the program.	Brenzik,_Leon									malware	
	true negative	outcome where the model correctly predicts the negative class.	google_dev_d austration-true-false-positive-negative										

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[illegible]

ID	Title of article, chapter, or page	Author(s) and/or Editors	Publication or website (either the main domain or major subdomain)	Volume	Issue	Page(s)	Year	URL	Notes
mihl_study_2080	Proposed Internet Congestion Control Mechanisms	Mihl, Kevin L, James J Fildes, Dong Yoon Choi, Edward Schwartz, and David Gens	NIST SP 500-282				2000	https://doi.org/10.6028/NIST.SP.500-282	This definition cites reference [94] in that paper, which is [94] Liu, A. and Kelson, W. D. (2008) Simulation Modeling and Analysis, 3rd edition, McGraw Hill.
friedman_additive_2009	Additive logistic regression: a statistical view of boosting (With discussion and a rejoinder by the authors)	Friedman, Jerome, Trevor Hastie, and Robert Tibshirani	The Annals of Statistics	28	2	337–407	2000	https://doi.org/10.1214/aos/1056564470	
homer_counterfactual_2017	Counterfactual Fairness	Konner, Matt, Joshua Loftus, Chris Russell, and Ricardo Silva	Advances in Neural Information Processing Systems (NIPS)				2007	https://proceedings.neurips.cc/paper/2007/file/70a8b4d076e4c4702f36e24796e5c5b0a9a1b.html	
construct_validity_9555	Construct Validity in Psychological Tests	Cronbach, Lee J., and Paul E. Meehl	Psychological Bulletin	52		281–302	1955	https://doi.org/10.1037/0033-2909.52.3.281	Abstract is tentative. Definition 1. Definition 2 is the formal definition provided in Section 3
fish_survey_2010	Survey Research Methods	Fish, A.	International Encyclopedia of Education (Third Edition)			152–160	2001	https://doi.org/10.1016/B978-0-08-043016-7.00016-7	Cronbach, Lee J., and Paul E. Meehl. "Construct Validity in Psychological Tests." <i>Psychological Bulletin</i> 52 (1955): 281–302. https://doi.org/10.1037/0033-2909.52.3.281
hollens_research_2000	Business Design and Methods: A Process Approach	Rennett S. Hollens, Bruce B. Abbott	Book (English Edition)				2001	https://www.amazon.com/Business-Design-Methods-Process-Approach/dp/090088840X	Glossary has definitions that are used
nsf_statistics_2012	NIST/SEMATECH e-Handbook of Statistical Methods						2012	https://doi.org/10.18434/STP.610	This is a book and may not be an ideal source
symeonidis_MLOps_2022	MLOps - Definitions, Tools and Challenges	Symeonidis, Georgios, Evangelos Serantidis, Apostolos Katakis, and George A. Papadimitriou	In 2022 IEEE 23th Annual Computing and Communication Workshop and Conference (CCWC)			453–460	2022	https://ieeexplore.ieee.org/document/9770002	This is an online site. Definition for Experimental Design is in Section 5.11
harrill_equality_2006	Equality of Opportunity in Impaired Learning	Harrill, Morris, Eric Price, and Nati and Iselio	Advances in Neural Information Processing Systems (NIPS)			3315–3323	2008	http://papers.nips.cc/paper/3374_equality_of_opportunity_in_impaired_learning.pdf	https://www.researchgate.net/publication/264044066
EEOC_OBA_Employee_Selection	Research Design and Methods: A Process Approach						2004	https://www.eeoc.gov/eeoc/policydocs/eo12958-guidance-equal-opportunity-employment-selection-procedures.cfm	Definition for "EEO 604 rule" appears in section 5 for the answer to Q. 11 "What is a substantially different rate of selection?"
engineering_safety_in_as_close_learning	Engineering safety in machine learning	Kash R. Varshney	Information Theory and Applications Workshop (ITAP), 2018				2018	https://www.ece.uvic.ca/~ece300/papers/itap2018/Varshney.pdf	
DDO_Modeling_and_Simulation	DDo Modeling and Simulation (MMS) Glossary		DDo Modeling and Simulation (MMS) Glossary				2019	https://www.ece.uvic.ca/~ece300/papers/itap2018/Varshney.pdf	Definition for "human-in-the-loop" appears on page 128 (P.2.4.1)
Model_Cards_for_Model_Reporting	Model Cards for Model Reporting	Margaret Mitchell, Simon Wu, Andrew Zaldivar, Parker Barnes, Lucy Colton, Ben Hutchinson, Elena Spertus, and Joshua Deborah Ravi	arXiv				2019	https://arxiv.org/abs/1810.03045	
David_Ledie_Morgan_Rig	Explaining Decisions Made with AI: A Workbook (Use Case 1: AI-Assisted Recruitment Tool)	David Ledie, Morgan Riggs	Explaining Decisions Made with AI: A Workbook (Use Case 1: AI-Assisted Recruitment Tool)				2021	https://www.fda.gov/oc/ai-explainability-workbook	Submitted on 5 Oct 2018 (v4), last revised 14 Jan 2019 (this version, v42)
deeplearningbook_intro	Introduction	Ian Goodfellow, Yoshua Bengio, Aaron Courville	Deep Learning				2016	https://www.deeplearningbook.org/contents/intro.html	Definition for "automation bias" is on page 18
Joseph_Rocca_Ensemble_methods	Chapter 5: Privacy-enhancing technologies (PETs)	UK Information Commissioner's Office	UK Information Commissioner's Office				2026	https://www.datacommission.gov.uk/consultations/privacy-enhancing-technologies	The definition for "deep learning" is taken from the bottom of page 1 and the very top of page 2, slightly restructured to fit the conventions of a definition.
google_dev_classification	Ensemble methods: bagging, boosting and stacking	Joseph Rocca	Towards Data Science				2019	https://towardsdatascience.com/ensemble-methods-bagging-boosting-and-stacking-c2561a161625	The definition for "differential privacy" appears on page 30. This document, as accessed on October 17, 2022, was last updated on September 1, 2022.
Classification_True-or_False_and_Positive-or_Negative	Classification: True or False and Positive or Negative	Google	Google Machine Learning Education Foundational Courses				2019	https://www.google.com/machine-learning/course/fundamentals/classification-true-or-false-and-positive-or-negative	Date of publication: April 22, 2019
Public_Health_and_Information_Science_2021	A Preliminary Scoping Study of Federated Learning for the Interest of Medical Things	Arifur Raheem, Sandra L. Woodley, Peter Andras	Public Health and Informatics: Proceedings of MBI 2021			504–505	2021	https://doi.org/10.1007/978-1-4939-9904-4_30	Definition for "federated learning" appears on page 504
Black's_Law_Dictionary_harm	The Law Dictionary / Black's Law Dictionary Second Edition	The Law Dictionary / Black's Law Dictionary Second Edition	The Law Dictionary / Black's Law Dictionary Second Edition				2020	https://www.oxfordlawdictionary.com/oxford-law-dictionary	
Machine_Learning_and_Linear_Models_How_They_Work_(In_Plain_English)	Machine Learning and Linear Models: How They Work (In Plain English)	Katie Cross	Datapro				2020	https://datapro.com/blog/machine-learning-algorithms-how-they-work-in-plain-english/	Published February 20, 2020
Open_Risk_Manual	Open Risk Manual	Ernst Shuman, Jonathan I. Tammir, Ke Wang, Michael Lanting	PNAS			89–93	2022	https://www.openriskmanual.org/en/1.0/About/Validation	Date of publication is February 3, 2020
MIT_Protected_Attributes	Mode 3: Pedagogical Framework for Addressing Ethical Challenges - Protected Attributes and "Fairness Through Unawareness"	MIT OpenCourseWare	Exploring Fairness in Machine Learning for International Development				2020	https://ocw.mit.edu/courses/6-894-ai-in-the-world-exploring-fairness-in-machine-learning-for-international-development-spring-2020/pages/module-three-protected-attributes-and-fairness-through-unawareness/	Published March 21, 2022
David_Salazar_sensitivity	How Sensitivity Adds Uplift to AI Inference	David Salazar	Thomson Reuters Practical Law				2020	https://www.thomsonreuters.com/en/insights/articles/ai-inference-sensitivity.html	Published May 14, 2020
pretext_data_2015	A Unified View of Label Shift Estimation	Garg, Sarabjit, Yali Wei, Sreyashankar Balakrishnan, and Zachary Lipton	NVidia Blogs			5–9	2015	https://blogs.nvidia.com/blog/2015/07/29/label-shift-estimation/	Not Necessarily the original source of label shift but provides the definition
hummed_data_2020	Data Science and Its Relationship to Big Data and Data-Driven Decision Making	Hummed, Mahir and Felix Nusselt	Advances in Neural Information Processing Systems			18–25	2020	https://proceedings.neurips.cc/paper/2020/file/70a8b4d076e4c4702f36e24796e5c5b0a9a1b.html	
Merrison_Webster_ranking	Data Preparation: A Survey of Commercial Tools	Merrison Webster	ACM SIGMOD Record			49–53	2019	https://doi.org/10.1145/3344444	
hutter_differential_2019	Ranking	Hutter, John E. and Frank L. Schmidt and Ronja Hutter	Merrison Webster Dictionary				2019	https://www.merrisonwebster.com/dictionary/ranking	Definition for "ranking" taken from definition 2
kerley_defooding_2022	Differential utility of employment tests by race: a comprehensive review and analysis	Kerley, John E. and Frank L. Schmidt and Ronja Hutter	Psychological Bulletin			78–125	2019	https://doi.org/10.1037/a0047444	
wolfram_math_2022	Defooding	Kerley, John E. and Frank L. Schmidt and Ronja Hutter	The New York Times				2022	https://www.nytimes.com/2022/07/14/us/politics/defooding.html	
aloudy_defooding_2019	MathWorld: The World's Most Extensive Mathematics Resource	MathWorld	MathWorld				2019	https://mathworld.wolfram.com/	
Machine_Learning_and_Linear_Models_How_They_Work_(In_Plain_English)	Machine Learning and Linear Models: How They Work (In Plain English)	Katie Cross	Datapro				2020	https://datapro.com/blog/machine-learning-algorithms-how-they-work-in-plain-english/	
Open_Risk_Manual	Open Risk Manual	Ernst Shuman, Jonathan I. Tammir, Ke Wang, Michael Lanting	PNAS			89–93	2022	https://www.openriskmanual.org/en/1.0/About/Validation	
MIT_Protected_Attributes	Mode 3: Pedagogical Framework for Addressing Ethical Challenges - Protected Attributes and "Fairness Through Unawareness"	MIT OpenCourseWare	Exploring Fairness in Machine Learning for International Development				2020	https://ocw.mit.edu/courses/6-894-ai-in-the-world-exploring-fairness-in-machine-learning-for-international-development-spring-2020/pages/module-three-protected-attributes-and-fairness-through-unawareness/	
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pretext_data_2015	A Unified View of Label Shift Estimation	Garg, Sarabjit, Yali Wei, Sreyashankar Balakrishnan, and Zachary Lipton	NVidia Blogs			5–9	2015	https://blogs.nvidia.com/blog/2015/07/29/label-shift-estimation/	
hummed_data_2020	Data Science and Its Relationship to Big Data and Data-Driven Decision Making	Hummed, Mahir and Felix Nusselt	Advances in Neural Information Processing Systems			18–25	2020	https://proceedings.neurips.cc/paper/2020/file/70a8b4d076e4c4702f36e24796e5c5b0a9a1b.html	
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hutter_differential_2019	Ranking	Hutter, John E. and Frank L. Schmidt and Ronja Hutter	Merrison Webster Dictionary				2019	https://www.merrisonwebster.com/dictionary/ranking	
kerley_defooding_2022	Differential utility of employment tests by race: a comprehensive review and analysis	Kerley, John E. and Frank L. Schmidt and Ronja Hutter	Psychological Bulletin			78–125	2019	https://doi.org/10.1037/a0047444	
wolfram_math_2022	Defooding	Kerley, John E. and Frank L. Schmidt and Ronja Hutter	The New York Times				2022	https://www.nytimes.com/2022/07/14/us/politics/defooding.html	
aloudy_defooding_2019	MathWorld: The World's Most Extensive Mathematics Resource	MathWorld	MathWorld				2019	https://mathworld.wolfram.com/	
Machine_Learning_and_Linear_Models_How_They_Work_(In_Plain_English)	Machine Learning and Linear Models: How They Work (In Plain English)	Katie Cross	Datapro				2020	https://datapro.com/blog/machine-learning-algorithms-how-they-work-in-plain-english/	
Open_Risk_Manual	Open Risk Manual	Ernst Shuman, Jonathan I. Tammir, Ke Wang, Michael Lanting	PNAS			89–93	2022	https://www.openriskmanual.org/en/1.0/About/Validation	
MIT_Protected_Attributes	Mode 3: Pedagogical Framework for Addressing Ethical Challenges - Protected Attributes and "Fairness Through Unawareness"	MIT OpenCourseWare	Exploring Fairness in Machine Learning for International Development				2020	https://ocw.mit.edu/courses/6-894-ai-in-the-world-exploring-fairness-in-machine-learning-for-international-development-spring-2020/pages/module-three-protected-attributes-and-fairness-through-unawareness/	
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hutter_differential_2019	Ranking	Hutter, John E. and Frank L. Schmidt and Ronja Hutter	Merrison Webster Dictionary				2019	https://www.merrisonwebster.com/dictionary/ranking	
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wolfram_math_2022	Defooding	Kerley, John E. and Frank L. Schmidt and Ronja Hutter	The New York Times				2022	https://www.nytimes.com/2022/07/14/us/politics/defooding.html	
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Machine_Learning_and_Linear_Models_How_They_Work_(In_Plain_English)	Machine Learning and Linear Models: How They Work (In Plain English)	Katie Cross	Datapro				2020	https://datapro.com/blog/machine-learning-algorithms-how-they-work-in-plain-english/	
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Merrison_Webster_ranking	Data Preparation: A Survey of Commercial Tools	Merrison Webster	ACM SIGMOD Record			49–53	2019	https://doi.org/10.1145/3344444	
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Machine_Learning_and_Linear_Models_How_They_Work_(In_Plain_English)	Machine Learning and Linear Models: How They Work (In Plain English)	Katie Cross	Datapro				2020	https://datapro.com/blog/machine-learning-algorithms-how-they-work-in-plain-english/	
Open_Risk_Manual	Open Risk Manual	Ernst Shuman, Jonathan I. Tammir, Ke Wang, Michael Lanting	PNAS			89–93	2022	https://www.openriskmanual.org/en/1.0/About/Validation	
MIT_Protected_Attributes	Mode 3: Pedagogical Framework for Addressing Ethical Challenges - Protected Attributes and "Fairness Through Unawareness"	MIT OpenCourseWare	Exploring Fairness in Machine Learning for International Development				2020	https://ocw.mit.edu/courses/6-894-ai-in-the-world-exploring-fairness-in-machine-learning-for-international-development-spring-2020/pages/module-three-protected-attributes-and-fairness-through-unawareness/	
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hummed_data_2020	Data Science and Its Relationship to Big Data and Data-Driven Decision Making	Hummed, Mahir and Felix Nusselt	Advances in Neural Information Processing Systems			18–25	2020	https://proceedings.neurips.cc/paper/2020/file/70a8b4d076e4c4702f36e24796e5c5b0a9a1b.html	
Merrison_Webster_ranking	Data Preparation: A Survey of Commercial Tools	Merrison Webster	ACM SIGMOD Record			49–53	2019	https://doi.org/10.1145/3344444	
hutter_differential_2019	Ranking	Hutter, John E. and Frank L. Schmidt and Ronja Hutter	Merrison Webster Dictionary				2019	https://www.merrisonwebster.com/dictionary/ranking	
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wolfram_math_2022	Defooding	Kerley, John E. and Frank L. Schmidt and Ronja Hutter	The New York Times				2022	https://www.nytimes.com/2022/07/14/us/politics/defooding.html	
aloudy_defooding_2019	MathWorld: The World's Most Extensive Mathematics Resource	MathWorld	MathWorld				2019	https://mathworld.wolfram.com/	
Machine_Learning_and_Linear_Models_How_They_Work_(In_Plain_English)	Machine Learning and Linear Models: How They Work (In Plain English)	Katie Cross	Datapro				2020	https://datapro.com/blog/machine-learning-algorithms-how-they-work-in-plain-english/	
Open_Risk_Manual	Open Risk Manual	Ernst Shuman, Jonathan I. Tammir, Ke Wang, Michael Lanting	PNAS			89–93	2022	https://www.openriskmanual.org/en/1.0/About/Validation	
MIT_Protected_Attributes	Mode 3: Pedagogical Framework for Addressing Ethical Challenges - Protected Attributes and "Fairness Through Unawareness"	MIT OpenCourseWare	Exploring Fairness in Machine Learning for International Development				2020	https://ocw.mit.edu/courses/6-894-ai-in-the-world-exploring-fairness-in-machine-learning-for-international-development-spring-2020/pages/module-three-protected-attributes-and-fairness-through-unawareness/</	

ID	Title of article, chapter, or page	Author(s) and/or Editor(s)	Publication or website (either the main domain or major subdomain)	Volume	Issue	Page(s)	Year	URL	Notes
NIST_CSRC_parity	parity	NIST Computer Security Resource Center	NIST Computer Security Resource Center					https://www.nist.gov/programs/parity/parity	
Dennis_Mercadal	L	Dennis Mercadal	Dictionary of Artificial Intelligence				1990	https://archive.org/details/dictionaryofartificialintelligence/page/161/mode/2up?q=parity	See page B3 for definition of "learning"; many other specific kinds of "learning" are defined here as well.
Elaterius_et_al_2020	Why Are We Asleep towards Algorithms? A Comprehensive Literature Review on Algorithmic Aversion	Elaterius Iamoussi, Izak Benbasat, and Armin Heitger	Proceedings of the 28th European Conference on Information Systems (ECIS), An Online AD Conference				2020	https://eais.edmgr.com/journal/article/3430202-09-2020-4	
Gabriel_2020	Artificial Intelligence, Values, and Alignment	Isaac Gilibert	Artificial Intelligence, Values, and Alignment	30			2020	https://doi.org/10.1007/978-1-4939-9952-2_2	
nist_800_200a	A Statistical Test Suite for Random and Pseudorandom Number Generators for Cryptographic Applications.	Rubini, Andrew, Juan Soto, James Neuchwat, Miles Smid, Elaine Barker, Stefan Leigh, Mark Levenson, et al.	NIST SP 800-200a				2007	https://csrc.nist.gov/publications/P18000a2.pdf	
iso_2382_107	Information technology – Vocabulary – Part 31: Artificial intelligence – Machine learning	ISO	ISO/IEC 2382-31				2020	https://www.iso.org/standard/75238-31.html	
iso_23820_2002	Artificial intelligence – Vocabulary – Part 31: Artificial intelligence – Machine learning	ISO	ISO/IEC 2382-31				2002	https://www.iso.org/standard/75238-31.html	
europa_eu_ethics_2019	Ethics Guidelines for Trustworthy AI	High-Level Expert Group on Artificial Intelligence	Draft Report				2019	https://ec.europa.eu/artificial-intelligence/eu-ethics-guidelines	
Frederman_et_al_2007	A Survey of Value Sensitive Design Methods	Bruce Frederickson, David G. Hendry, and Alan Herring	Foundations and Trends® in Human-Computer Interaction				2007	https://www.fondationsand-trends.org/abstract/FHI-2007-01	
Bipartisan_Policy_Center_impact_assessments	Explainer: Impact Assessments for Artificial Intelligence	Sean Long, Jeremy Pessier, and Tom Rusanoff	Bipartisan Policy Center				2022	https://www.bipartisanpolicy.org/expert-panels/assessments-for-artificial-intelligence	Published November 9, 2022
Ernst_Dukler_2001	The Value of Knowledge Management	Ernst Dukler	Knowledge Management in Theory and Practice				2001	https://www.google.com/books/edition/Knowledge_Management_in_Theory_and_Practice/MwUQAAMAAJAAQ?redir_esc=y#v=onepage&q=qualitative%20research&pg=PA134	Definition 1 for "qualitative measurement" is on page 143 ("Qualitative measures can serve too...")
Cost_Management_ch2	Basic Cost Management Concepts	Dan R. Hansen, Maryanne M. Mowen, Dan L. Heitger	Cost Management				2001	https://www.google.com/books/edition/Cost_Management/DwUQAAMAAJAAQ?redir_esc=y#v=onepage&q=qualitative%20research&pg=PA134	Definition 2 for "qualitative measurement" is on page 143 ("Qualitative measures can serve too...")
Virginia_Dignam_responsibility_and_artificial_intelligence	Responsibility and Artificial Intelligence	Virginia Dignam	The Oxford Handbook of Ethics of AI				2020	https://www.google.com/books/edition/The_Oxford_Handbook_of_Ethics_of_AI/9780190087849?pg=PR134	Definition 1 for "values" is taken verbatim from page 22; see the note at the end of the term's row.
young_avoiding_2021	Avoiding Disparity Amplification under Different Worldviews	Yoon, Samuel, and Michael Carl Tschurtz	Exact 2021 In Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency	275-292			2021	https://arxiv.org/abs/2106.14408v3	
Miriam-Webster_context	Miriam-Webster Dictionary	Miriam-Webster	Miriam-Webster Dictionary				2021	https://www.merriam-webster.com/dictionary/context	
jacobs_measurement_2023	Measurement and Fairness	Jacobs, Abigail Z., and Hanna Wallach	Exact 2021 In Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency	273-283			2021	https://arxiv.org/abs/2106.14408v3	Taken from definition 2
Miriam-Webster_impact	Impact	Miriam-Webster	Miriam-Webster Dictionary				2021	https://www.merriam-webster.com/dictionary/impact	Taken from definition 2
Lisa_M_Green_SAGE	M. Mind Methods Research	Lisa M. Green	The SAGE Encyclopedia of Qualitative Research Methods				2008	https://www.sagepub.com/reference/9781412988414.pdf	Definition for "mixed methods" appears on page 538.
NIST_AI_RMF_10	NIST AI RMF 1.0	NIST	NIST AI RMF 1.0				2023	https://nvlpubs.nist.gov/nistpubs/jrnl/2023/nist.jrnl.10.pdf	Definition 5 for "VAT" comes from p. 3 of NIST AI RMF 1.0.
45_CFR_46_2018_Require_memo.	(45 CFR 46, 2018, Require memo.	United States Department of Health and Human Services (HHS)	45 CFR 46				2008	https://www.fda.gov/oc/ohrt/45-cfr-46-2018-require-memo-revised-2018-12-14	
cambridge_executive_2023	Cambridge Dictionary executive	Cambridge Dictionary	Cambridge Dictionary				2023	https://dictionary.cambridge.org/dictionary/executive	
lyons_contestability_2021	Conceptualising Contestability: Perspectives on Contesting Algorithmic Decisions	Lyons, Henrietta, Eduardo Veloso, and Tim Miller	Proceedings of the ACM on Human-Computer Interaction				2021	https://doi.org/10.1145/3446666	
cambridge_contestable_20_23	Contestable	Cambridge Dictionary	Cambridge Dictionary				2023	https://dictionary.cambridge.org/dictionary/contestable	
Saleh_Ahlfalah_ML_in_Biotech	Supervised Machine Learning	Saleh Ahlfalah	Machine Learning in Biotechnology and Life Sciences: Build Machine Learning Models Using Python and Deploy Them on the Cloud	168-223			2022	https://www.google.com/books/edition/Machine_Learning_in_Biotechnology_and_Life_Sciences/9781493999522?pg=PR168	Definition 4 for "supervised learning" appears on page 168, definition 2 for "regression" also appears on page 168
Schneider_McGrew_in_The_mind_McGrew_2018	The Caroll-Horn-Carroll Theory of Cognitive Abilities	W. Joel Schneider and Kevin S. McGrew, edited by Dawn P. Flanagan and Erin M. McDonough	Contemporary Intellectual Assessment: Theories, Tests, and Issues	73-93			2008	https://www.google.com/books/edition/Contemporary_Intellectual_Assessment/9781441934650	Definition 1 for "expertise" appears on page 72.
Little_2013	The Measurement Model	Todd L. Little	Longitudinal Structural Equation Modeling	73-93			2013	https://www.google.com/books/edition/Longitudinal_Structural_Equation_Modeling/9781441934650	Definition 1 for "measurement model" appears on page 73.
Miriam-Webster_executive	executive	Miriam-Webster	Miriam-Webster Dictionary				2023	https://www.merriam-webster.com/dictionary/executive	Definition 1 for "executive" is taken from Miriam Webster's definition of "executive" 2 of 2 noun 3.
Dorf_2018	Measurement and Instrumentation	Richard C. Dorf	The Engineering Handbook	154-160			2008	https://www.google.com/books/edition/The_Engineering_Handbook/1-711341414-72/mode/2up?q=qualitative%20research&pg=PR154	Definition 1 for "error propagation" is taken from page 152; technically, the textbook offers the term as "propagation of uncertainty" which is synonymous with "error propagation".
Miriam-Webster_example	example	Miriam-Webster	Miriam-Webster Dictionary				2023	https://www.merriam-webster.com/dictionary/example	
Miriam-Webster_ethic	ethic	Miriam-Webster	Miriam-Webster Dictionary				2023	https://www.merriam-webster.com/dictionary/ethic	
Miriam-Webster_antropomorphism	antropomorphism	Miriam-Webster	Miriam-Webster Dictionary				2023	https://www.merriam-webster.com/dictionary/antropomorphism	
berndt_guide_2020	Guide to Intelligent Data Science: How to Intelligently Make Use of Real Data	Berndt, Michael R., Christian Borchert, Frank Hippner, Frank Klawns, and Roman Stige	Springer International Publishing				2020	https://www.google.com/books/edition/Guide_to_Intelligent_Data_Science/9781493999522	
alan-barak_jamieson_2023	Human AI Interaction in Public Sector Decision-Making: Information Bias and 'Selective Adherence' to Algorithmic Advice	Alan-Barak, Sam, and Madeline Rammer	Human-AI Interaction in Public Sector Decision-Making: Information Bias and 'Selective Adherence' to Algorithmic Advice	33	1	103-109	2023	https://doi.org/10.1007/978-1-4939-9952-2_3	
humphrey_addressing_202	Addressing Harsh Real and Idealizing Distortions in Health Professions Learning Environments: An Urgent Challenge	Humphrey, Holly J., Dana Levinson, Marc A. Nix, and Stephen C. Schumacher	Academic Medicine	95	125		2021	https://doi.org/10.1093/acmed/abz001	
iso_23820_2002	The Art of Computer Programming, Volume 2: Seminumerical Algorithms	Donald Knuth	Addison-Wesley				1981	https://www.iso.org/standard/75238-31.html	
gervy_computers_1979	Computers and Intractability: A Guide to the Theory of NP-Completeness	Michael Garey and David Johnson	W. H. Freeman				1979	https://www.google.com/books/edition/Computers_and_Intractability/9780716203304	
cambridge_impact_2023	Impact	Cambridge Dictionary	Cambridge Dictionary				2023	https://dictionary.cambridge.org/dictionary/impact	
law_policy_2023	Policy	The Law Dictionary	The Law Dictionary				2023	https://www.google.com/books/edition/The_Law_Dictionary/9781441934650	
fernandez_redavid_1992	Residual Analysis and Data Transformations: Important Tools in Statistical Analysis	Fernandez, George C. I.	Biometrics	27	4	297-300	1992	https://www.jstor.org/stable/2342444	
Leavy_CHRKE_Intro	Introduction	Patricia Leavy	The Oxford Handbook of Qualitative Research	1-13			2008	https://www.google.com/books/edition/The_Oxford_Handbook_of_Qualitative_Research/9780190087849	Definition of "qualitative research" is taken from page 2.
Barbour_2014	The scope and contribution of qualitative research	Rosalind S. Barbour	Introducing Qualitative Research: A Student's Guide, Second Edition	19-27			2014	https://archive.org/details/introducingqualitative0000barb/page/19/mode/2up?q=qualitative%20research	Definition of "qualitative research" is taken from page 13.
Miriam-Webster_engineer	engineer	Miriam-Webster	Miriam-Webster Dictionary				2023	https://www.merriam-webster.com/dictionary/engineer	Definition takes from both the noun and verb definitions.
AI_incident_2023	AI Incident Database	AI Incident Database	AI Incident Database				2023	https://www.google.com/books/edition/AI_Incident_Database/9781441934650	
interaction_context_2023	Interaction Design: The Glossary of Human Computer Interaction	M. Karatavits and M. Kordel	Artificial Intelligence and the Courts: Materials for Judges				2020	https://www.google.com/books/edition/Artificial_Intelligence_and_the_Courts/9781441934650	
AASAI_and_Bias_2022-09	Artificial Intelligence and Bias – An Evaluation	George Washington University	George Washington University				2022	https://www.georgetown.edu/news/ai-bias-evaluation	Definition for "racism" is taken from page 11.
Seth_Boden_2020	Start Here: A Primer on Diversity and Inclusion (Part 1 of 2)	Seth Boden	Harvard Business Publishing				2020	https://www.harvardbusiness.org/start-here-a-primer-on-diversity-and-inclusion-part-1-of-2/	July 23, 2020
GWU_diversity_and_inclus	Diversity and Inclusion Defined	George Washington University	George Washington University				2020	https://www.georgetown.edu/news/ai-bias-evaluation	
HUD_diversity_and_inclus	Diversity and Inclusion Definitions	U.S. Department of Housing and Urban Development	U.S. Department of Housing and Urban Development				2020	https://www.hud.gov/program_offices/administration/affirmativeaction/diversity_inclusion_definitions	
Jamieson_Gowatt_Powall	Reflexivity in quantitative research: A rationale and beginner's guide	Michele R. Jamieson, Gisela H. Gowatt, and Madeline Powell	Social and Personality Psychology Compass	447-455			2023	https://doi.org/10.1111/psp.12725	Definition for "reflexivity" appears on page 2. Jamieson, Gowatt, and Powell (Reflexivity in quantitative research: A rationale and beginner's guide) are paraphrasing Carl Willig's ideas, but in their citation of Willig's book (Introducing Qualitative Research in Psychology), they're not providing a page number where they are paraphrasing how Willig defines reflexivity. So they must be paraphrasing the general sense throughout the book, maybe. I guess that gives us the green light to just fine tune with citing Jamieson, Gowatt, and Powell as the "original" source for the definition.
Industrial_Network_Securi	Monitoring Endpoints	Eric D. Knapp and Joel Langill	Industrial Network Security: Securing Critical Infrastructure Networks for Smart Grid, SCADA, and Other Industrial Control Systems				2021	https://www.google.com/books/edition/Industrial_Network_Security/9781441934650	Definition for "retention limit" appears on page 243; appears as "data retention" in the book, but works for "retention limit".
ChatGPT	ChatGPT	OpenAI	OpenAI				2023	https://www.openai.com/chatgpt	We can use this to cite any moments that we use a ChatGPT-generated definition in lieu of a more authoritative source.
Miriam-Webster_parity	Parity	Miriam-Webster	Miriam-Webster Dictionary				2023	https://www.merriam-webster.com/dictionary/parity	
barredo_explainable_2020	Explainable Artificial Intelligence (XAI): Concepts, Taxonomies, Opportunities and Challenges toward Responsible AI	Breuer, Armin, Alejandro, Natalia Diaz-Rodriguez, Javier Del Ser, Adrien Bontemps, Elham Taheri, Alberto Barbado, Gabriel Garcia, et al.	Information Fusion	58			2020	https://doi.org/10.1016/j.inffus.2020.12.002	
jackman_oxford_2008	Measurement	Simon Jackman	The Oxford Handbook of Political Methodology				2008	https://www.oxfordhandbook.com/view/book/9780190087849	
Hammacher_2006_Buettl	1. Qualitative research methods when to use them and how to judge them; 2. How to use and assess qualitative research methods	I. K. Hammacher, M. Kirkman, and S. de Lacy; 2. Louise Buettl, Wolfgang Wick, and Christoph Gombigier	1. Human Reproduction; 2. Neurological Research and Practice	1.31	1.3.1.2.4	1.2006; 2.2002	1.2006; 2.2002	https://academic.oup.com/humrep/article/31/3/493/213737	The definition combines two sources into one. I (Jamieson) have organized this citation row using 1 and 2 to mark, respectively, the Hammacher et al. and Buettl et al. processes. Citation 1 (Jamieson, K. Hammacher, M. Kirkman, S. de Lacy, Qualitative research methods when to use them and how to judge them, Human Reproduction, Volume 31, Issue 3, March 2006, Pages 493-501. https://doi.org/10.1093/humrep/del033) Citation 2 (Jamieson, K. Hammacher, M. Kirkman, S. de Lacy, Qualitative research methods when to use them and how to judge them, Human Reproduction, Volume 31, Issue 3, March 2006, Pages 493-501. https://doi.org/10.1093/humrep/del033) Citation 3 (Jamieson, K. Hammacher, M. Kirkman, S. de Lacy, Qualitative research methods when to use them and how to judge them, Human Reproduction, Volume 31, Issue 3, March 2006, Pages 493-501. https://doi.org/10.1093/humrep/del033) Citation 4 (Jamieson, K. Hammacher, M. Kirkman, S. de Lacy, Qualitative research methods when to use them and how to judge them, Human Reproduction, Volume 31, Issue 3, March 2006, Pages 493-501. https://doi.org/10.1093/humrep/del033) Citation 5 (Jamieson, K. Hammacher, M. Kirkman, S. de Lacy, Qualitative research methods when to use them and how to judge them, Human Reproduction, Volume 31, Issue 3, March 2006, Pages 493-501. https://doi.org/10.1093/humrep/del033) Citation 6 (Jamieson, K. Hammacher, M. 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Kirkman, S. de Lacy, Qualitative research methods when to use them and how to judge them, Human Reproduction, Volume 31, Issue 3, March 2006, Pages 493-501. https://doi.org/10.1093/humrep/del033) Citation 11 (Jamieson, K. Hammacher, M. Kirkman, S. de Lacy, Qualitative research methods when to use them and how to judge them, Human Reproduction, Volume 31, Issue 3, March 2006, Pages 493-501. https://doi.org/10.1093/humrep/del033) Citation 12 (Jamieson, K. Hammacher, M. Kirkman, S. de Lacy, Qualitative research methods when to use them and how to judge them, Human Reproduction, Volume 31, Issue 3, March 2006, Pages 493-501. https://doi.org/10.1093/humrep/del033) Citation 13 (Jamieson, K. Hammacher, M. Kirkman, S. de Lacy, Qualitative research methods when to use them and how to judge them, Human Reproduction, Volume 31, Issue 3, March 2006, Pages 493-501. https://doi.org/10.1093/humrep/del033) Citation 14 (Jamieson, K. Hammacher, M. Kirkman, S. de Lacy, Qualitative research methods when to use them and how to judge them, Human Reproduction, Volume 31, Issue 3, March 2006, Pages 493-501. https://doi.org/10.1093/humrep/del033) Citation 15 (Jamieson, K. Hammacher, M. Kirkman, S. de Lacy, Qualitative research methods when to use them and how to judge them, Human Reproduction, Volume 31, Issue 3, March 2006, Pages 493-501. https://doi.org/10.1093/humrep/del033) Citation 16 (Jamieson, K. Hammacher, M. Kirkman, S. de Lacy, Qualitative research methods when to use them and how to judge them, Human Reproduction, Volume 31, Issue 3, March 2006, Pages 493-501. https://doi.org/10.1093/humrep/del033) Citation 17 (Jamieson, K. Hammacher, M. Kirkman, S. de Lacy, Qualitative research methods when to use them and how to judge them, Human Reproduction, Volume 31, Issue 3, March 2006, Pages 493-501. https://doi.org/10.1093/humrep/del033) Citation 18 (Jamieson, K. Hammacher, M. 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Wikipedia, "Decision-making"	Decision-making	Wikipedia	Wikipedia					https://en.wikipedia.org/wiki/Decision-making	Check out The New Science of Management Decision (2017) to try to locate the original source of the definition.
Shelvin, et al., 2010	The limits of machine intelligence	Henry Shelvin, Karina Vold, Matthew Cronin, and Maria Halina	EMBO Reports	20	10	e41877	2009	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2738800/	
EEOC, ADA, AI	The Americans with Disabilities Act and the Use of Software, Algorithms, and Artificial Intelligence to Assess Job Applicants and Employees	U.S. Equal Employment Opportunity Commission	U.S. Equal Employment Opportunity Commission				2002	https://www.eeoc.gov/press/ada/american-disabilities-act-and-use-technology-employment-artificial-intelligence	Definition for "screen out" taken from this page.
Merriam-Webster, "screen_out_apa_experiment_2023_apa_DoF_laboratory_cle_apa"	screen out experiment	Merriam-Webster	Merriam-Webster Dictionary				2023	https://www.merriam-webster.com/dictionary/screen%20out	
APA, DoF, laboratory_cle_apa	laboratory research	American Psychological Association (APA)	APA Dictionary of Psychology				2023	https://dictionary.apa.org/?term=laboratory-research	
UNODC, Glossary_QA, CL P	Glossary of Terms for Quality Assurance and Good Laboratory Practices	Laboratory and Scientific Section of the United Nations Office on Drugs and Crime	Glossary of Terms for Quality Assurance and Good Laboratory Practices				2009	https://www.unodc.org/documents/lab/glossary/GLOSSARY_TOTM_2009_2.pdf	
World_Wide, Words_In_a_Net	World Wide Words	World Wide Words	World Wide Words					http://www.worldwidewords.org/worldwideblog.html	
Businios, Baffes, Eversand Merriam-Webster, amplify	An Appraisal of Human Experimentation in International Law and Practice: The Need for International Regulation of Human Experimentation	M. Cheryl Businios, Thomas G. Baffes, and John T. Eversand	Journal of Criminal Law and Criminology	72	4	1087-1098	1981	https://www.cambridge.org/core/books/criminology-and-criminal-justice/american-experiments-on-the-effects-of-drugs-on-the-human-mind	
Copta, et al., HAR, 2022	Human activity recognition in artificial intelligence framework: a narrative review	Neha Copta, Samrat K. Copta, Rishabh K. Pathak, Vanita Jain, Parina Rashid, and Supri K. Sati	Artificial Intelligence Review	35		4752-4808	2022	https://link.springer.com/article/10.1007/s10462-021-30281-z	
Merriam-Webster, "amplify"	amplify	Merriam-Webster	Merriam-Webster Dictionary					https://www.merriam-webster.com/dictionary/amplify	
Freeman, et al., 2004	Active learning increases student performance in science, engineering, and mathematics	Scott Freeman, Sarah L. Eddy, Miles McDonough, Michele K. Smith, Nadine Koroziar, Hannah Jordt, and Mary Pat Wanderath	PNAS	81	23	8440-8445	2004	https://www.pnas.org/doi/10.1073/pnas.232920081	
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Peave, Lawrence, ARIS, 2_02-02	AI Engineering: An Academic Research Roadmap	Joshua Peave and Craig Lawrence	Applied Research Laboratory for Intelligence and Security (ARLIS)				2023	https://www.arlis.gov/Portals/0/ARIS_2022.pdf	We have this PDF, but I do not think it is readily available online. See also https://www.arlis.gov/Portals/0/ARIS_2022.pdf
Survey, of, "Hallucination," i_n_NLP	Survey of Hallucination in Natural Language Generation	Jiahui Shen, Yuxuan Luo, Rita Fricker, Tinghui Yu, Dan Su, Yan Yu, Erkan Jia, Yu Jin, Bang Biao, Andrea Madotto, and Pascale Fung	ACM Computing Surveys	55	12	1-38	2023	https://dl.acm.org/doi/10.1145/3576710	Definition for "hallucination" is taken from page marked 2483.
APA, "hallucination"	hallucination	American Psychological Association (APA)	APA Dictionary of Psychology					https://dictionary.apa.org/?term=hallucination	
APA, content, validity	content validity	American Psychological Association (APA)	APA Dictionary of Psychology					https://dictionary.apa.org/?term=content-validity	
ISO, 824-02:2008	ISO 824-02:2008 Ergonomics of human-system interaction - Part II: Usability Definitions and concepts	ISO	ISO Online Browsing Platform				2008	https://www.iso.org/obp/ui/#iso:code:38104:02-2008	
APA, criterion, validity	criterion validity	American Psychological Association (APA)	APA Dictionary of Psychology					https://dictionary.apa.org/?term=criterion-validity	
APA, data, analysis	data analysis	American Psychological Association (APA)	APA Dictionary of Psychology					https://dictionary.apa.org/?term=data-analysis	
APA, decision, making	decision making	American Psychological Association (APA)	APA Dictionary of Psychology					https://dictionary.apa.org/?term=decision-making	
Lehto, Nanda, 2023	Decision-Making Models, Decision Support, and Problem Solving	Mark R. Lehto and Gaurav Nanda	Handbook of Human Factors and Ergonomics, Fifth Edition	539	2022			https://onlinelibrary.wiley.com/doi/10.1002/9781119586431.ch36	The editors of this book are Gaurav Nanda and Waldemar Karwowski
Baum, "Thinking, and, Deci	Thinking, and, Deciding	Jonathan Baum	Thinking and Deciding				2008	https://doi.org/10.1016/B978-0-12-374600-0.ch36	Page 8 also cited here: https://www.researchgate.net/publication/315366770/figure/fig/1/figure-fig1/1516677000000/Thinking-and-Deciding.pdf
EO, DEI, 2021	Executive Order on Diversity, Equity, Inclusion, and Accessibility in the Federal Workforce	Joseph R. Biden Jr.	The White House				2021	https://www.whitehouse.gov/presidential-actions/2021/06/25/executive-order-on-diversity-equity-inclusion-and-accessibility-in-the-federal-workforce/	This executive order was published on June 25, 2020.
APA, ethics	ethics	American Psychological Association (APA)	APA Dictionary of Psychology					https://dictionary.apa.org/?term=ethics	
APA, external, validity	external validity	American Psychological Association (APA)	APA Dictionary of Psychology					https://dictionary.apa.org/?term=external-validity	
CNN, false, negative	CNN, false, negative	NIST Cyber	Information Technology Laboratory Computer Security Resource Center Glossary					https://www.nist.gov/cybersecurity/itl/computer-security-resource-center-glossary	
CNN, false, positive	CNN, false, positive	NIST Cyber	Information Technology Laboratory Computer Security Resource Center Glossary					https://www.nist.gov/cybersecurity/itl/computer-security-resource-center-glossary	
Wike, Meta, 2012	Cognitive bias	A. Wike and B. Meta	Encyclopedia of Human Behavior	1	529-535	2002		https://www.sciencedirect.com/science/article/pii/S1574666702000147	Edited by V.S. Ramachandran
AJG, incident, response	Defining an "Incident Response"	Sean McGregg	Artificial Intelligence Incident Database					https://dictionary.apa.org/?term=artificial-intelligence-incident-database	
APA, integrity	integrity	American Psychological Association (APA)	APA Dictionary of Psychology					https://dictionary.apa.org/?term=integrity	
APA, internal, validity	internal validity	American Psychological Association (APA)	APA Dictionary of Psychology					https://dictionary.apa.org/?term=internal-validity	
APA, learning	learning	American Psychological Association (APA)	APA Dictionary of Psychology					https://dictionary.apa.org/?term=learning	
The McNamara Fallacy	The McNamara Fallacy	Jonathan Cook	The McNamara Fallacy				2023	https://www.mcnamarafallacy.com/	
Crowell, Clark, mixed, ine	observation	John W. Crowell and Vicki L. Place Clark	Designing and Conducting Mixed Methods Research, Third Edition				2007	https://www.crowell.com/books/mixed-methods-research	I don't know which chapter and page this citation comes from, all I know is that it's somewhere in the book.
APA, observation	observation	American Psychological Association (APA)	APA Dictionary of Psychology					https://dictionary.apa.org/?term=observation	
Glossary of Statistical, Te	Glossary of Statistical Terms	Philip R. Sklar	StatSci				2009	https://www.stat.tulane.edu/~sklar/StatSci/Gloss/Gloss.htm	
Wikipedia, BASED	Root mean square deviation	Wikipedia	Wikipedia					https://en.wikipedia.org/wiki/Root_mean_square_deviation	
APA, recognition	recognition	American Psychological Association (APA)	APA Dictionary of Psychology					https://dictionary.apa.org/?term=recognition	
APA, recall	recall	American Psychological Association (APA)	APA Dictionary of Psychology					https://dictionary.apa.org/?term=recall	
APA, stereotype	stereotype	American Psychological Association (APA)	APA Dictionary of Psychology					https://dictionary.apa.org/?term=stereotype	
Acquiescence, Valler, 2008	The CUE Construction and Its Value	Martha Acquiescence and Valler	Therapy & Psychology	8	5	629-652	1998	https://doi.org/10.1023/A:102261800000000000	Definition 3 for "stereotype" is taken from page 631.
APA, autonomy	autonomy	American Psychological Association (APA)	APA Dictionary of Psychology					https://dictionary.apa.org/?term=autonomy	
Charma, Hosenow	Grounded Theory Methods for Qualitative Psychology	Kathy Charma and Karen Hosenow	The Sage Handbook of Qualitative Research in Psychology				2005	https://doi.org/10.4135/9781473910000	
Math, 2021	Critical Technical Analysis	Maya Math and Martin M. Math	Journal of Social Computing	2	4	288-295	2021	https://doi.org/10.4135/9781473910000	
APA, reflexivity	reflexivity	American Psychological Association (APA)	APA Dictionary of Psychology					https://dictionary.apa.org/?term=reflexivity	
Lee, See, 2004	Trust in Automation: Designing for Appropriate Reliance	John D. Lee and Katrina A. See	Human Factors: The Journal of the Human Factors and Ergonomics Society	46	1	50-80	2004	https://doi.org/10.1080/00140130410001661000	
Major, Dawd, Schoorman, 1995	An Integrative Model of Organizational Trust	Bruce C. Major, James H. Dawd, and F. David Schoorman	The Academy of Management Review	20	3	709-734	1995	https://doi.org/10.2307/258704	
NISTIR 8250	NISTIR 8250 Trust Recognition Vendor Test (TRV) Part 3: Demographic Effects	Patrick Grother, Ido Nijm, and Kaper Hernandez	NIST				2009	https://www.nist.gov/itl/nist-trust-recognition-vendor-test-trv-part-3-demographic-effects	
Usability, type	Usability type	Usability.gov	Usability.gov					https://www.usability.gov/what-is-usability-methods/usability-testing.html	
Euro, Wikipedia	underrepresentation	Euro, Wikipedia	Euro, Wikipedia					https://www.euro-wikipedia.com/social-science/psychology-and-social-sciences/underrepresentation	
Arum, Jahan, History, 202	History of Generative AI: From GAN to GPT-4	Arum Jahan	McKinsey & Company				2023	https://www.mckinsey.com/industries/technology-and-digital-transformation/our-insights/history-of-generative-ai-from-gan-to-gpt-4	Published March 7, 2023
McKinsey, generative, AI	What is generative AI?	McKinsey & Company	McKinsey & Company				2023	https://www.mckinsey.com/industries/technology-and-digital-transformation/our-insights/what-is-generative-ai	Published January 10, 2023
Sehri, et al., 2022	Toward Verified Artificial Intelligence	Saikat A. Sehri, Doran Sadigh, and S. Shankar Sauriy	Communications of the ACM	65	7	46-55	2022	https://doi.org/10.1145/3500000	
Liam, Ting, 2022, Meta's	Meta warns its new chatbot may forget that it's a bot	Liam Ting	ZDNet				2022	https://www.zdnet.com/article/meta-warns-its-new-chatbot-may-not-remember-the-future/	Published August 8, 2022
Merriam-Webster, requirement	requirement	Merriam-Webster	Merriam-Webster Dictionary					https://www.merriam-webster.com/dictionary/requirement	

[1] Add citation to citations sheet and only list ID in these columns

[2] Make sure the spelling matches another term (value in A column)