Glossary fAIr LAC in a box

A

Affected people

Individuals who are affected by the design and implementation of the project and who wish to protect their personal data.

Source: GDPR Art. 4

Algorithm

An algorithm basically consists of a set of mathematical operations that are programmed to meet a certain objective. As computational procedures, algorithms are tools that do not attempt to establish a causal link between specific variables and effects, but instead produce a result. Algorithms are often implemented as part of decision-making processes, to classify items, or to predict events. Today, the word “algorithm” is often used to refer to automated computational processes, which are known as machine learning algorithms, the most widely implemented algorithms over the last two decades.

Source: The definition of an algorithm in this glossary is based mainly on relevant academic works and Eticas Research and Consulting's interpretation of previous works.

Algorithmic Audit

A procedure to assess the design, development, and implementation of a given algorithm. This can be done internally (by the institution that designs and uses the algorithm) or externally, by a specialized company or institution.

Source: Eticas Research and Consulting. See the Algorithmic Audit Guide.

Algorithmic Audit

Algorithmic bias arises when a particular data-driven algorithmic model repeatedly produces results that the people developing, creating, and training the system deem to be undesirable. Often, but not always, this is because the process of collecting and using training data is itself biased (pre-algorithmic bias). On other occasions, it is due to problems with how the algorithm interacts with other processes once the algorithm is applied in a particular context (post-algorithmic bias). When these undesirable outcomes result in some form of systematic discrimination, . which produces disadvantageous outcomes involving one or more so-called protected or vulnerable groups, a discriminatory algorithmic bias or algorithmic discrimination is said to exist.

Source: The definitions of discrimination and bias in this glossary are based mainly on relevant academic works and Eticas Research and Consulting's interpretation of previous works. See DCC UChile's Algorithmic Bias presentation.

Algorithmic discrimination

Algorithmic discrimination refers to unequal treatment by an algorithm of person X in comparison with person Y based on one of X’s attributes, especially if this entails a protected attribute (see definition). The discrimination in question is not necessarily negative or disadvantageous, but might indeed be positive or advantageous. This will depend on how the outcomes are interpreted from a social and ethical standpoint, in a given context. One example of this would be a form of discrimination that has a positive effect on a protected or vulnerable group (such as disabled people), by providing them with significantly more resources than a privileged group (such as nondisabled people).

Source: The definitions of discrimination and bias in this glossary are based mainly on relevant academic works and Eticas Research and Consulting's interpretation of previous works. See Algorithmic Bias Explained by Institute for Public Policy Research and Visual Analysis of Discrimination in Machine Learning by IEEE Visualization Conference.

Anonymization

"Information which does not relate to an identified or identifiable natural person" is considered to be anonymous. Anonymization is thus the process whereby data is "rendered anonymous in such a manner that the data subject is not or no longer identifiable."

Source: GDPR, Article 36. See the anonymization guide of the Spanish Data Protection Agency (AEPD).

ARCO Rights

A set of rights of data subjects is listed in the European Data Protection Regulation (GDPR) and other national regulations worldwide. ARCO includes the Right of Access, which involves the guarantee of the data subject to access their personal information in various circumstances; the Right of Rectification, which includes the possible modification of data held by the data controller or data processor at the request of the data subject in various circumstances (e.g. inaccuracy of the data); the Right of Cancellation (or Deletion), which allows the data subject to request and obtain the blocking or deletion of data held by the data controller in various circumstances; and the Right of Opposition, which allows the data subject to request and obtain from the data controller the cessation of the processing of their personal data in various scenarios.

Artificial Intelligence

Artificial intelligence techniques use data analysis to model some aspects of reality. The results of AI models are typically used to predict and anticipate possible future events. AI techniques include machine learning and deep machine learning, among others, and are applied in cases such as intelligent robotics, autonomous vehicles, chatbots, or artificial vision.

Source: Government Office for Science. Artificial intelligence: opportunities and implications for the future of decision making. 9 November 2016. Artificial Index Report 2019 by Stanford University.

C

Chatbots

"Conversational agents" software applications that mimic written or spoken human speech for the purposes of simulating a conversation or interaction with a real person.

Cognitive search

Enables knowledge discovery that is highly relevant to users' intent by deriving contextual insights from conceptual data. It does this by recognizing the patterns and relationships that exist within virtually any type of information – structured or unstructured, written or spoken.

Competent Authorities

The Data Protection Officer (DPO) must ensure that the organization processes the personal data of its staff, customers, suppliers, or any other person (also referred to as data subjects) following the applicable data protection rules. The Data Protection Regulation (Regulation (EU) 2018/1725) in force obliges EU institutions and agencies to appoint a DPO. Regulation (EU) 2016/679 enforces the designation of a DPO in some organizations in EU countries as of May 25, 2018.

Source: IADB - Eticas Research and Consulting.

Computer vision

Subfield of artificial intelligence that trains computers to interpret and understand the visual world. Using digital images from cameras and videos and deep learning models, machines can accurately identify and classify objects and then react according to what is being seen.

D

Data controller

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.

Source: GDPR/ICO

Data Encryption

The encoding or enciphering of data whose content is to be protected by transforming it into digits, letters, or symbols, using a key, message, or text.

Source: RAE (The Royal Spanish Academy)

Data leakage notification systems

In the event of the undesired leakage of the data contained in a system, notification systems make it possible to inform the person(s) concerned that this security problem has occurred and, where appropriate, of the measures that will be taken in response. Action protocols may include notification systems like these and the planning of other actions to address or remedy the problem (e.g., the data protection security systems, database deletion, etc.).

Data processor

"Processor" means a natural or legal person, public authority, agency or other body which processes personal data on behalf of the controller.

Source: See the definition of data processor in ICO's General Data Protection Regulation (GDPR).

Data Protection Impact Assessment

The Data Protection Impact Assessment (DPIA) is a process to identify and minimize the data protection risks of a project. Under the European regulation, the DPIA is mainly required when processing is likely to result in a high risk to individuals. It includes some specific types of processing or sensitive data. A DPIA should describe the nature, scope, context, and purposes of the processing; assess the necessity, proportionality, and compliance measures; identify and assess the risks to individuals, and identify any additional measures to mitigate those risks.

Source: See ICO's DPIA (Data Protection Impact Assessments) guide.

Data Protection Officer

The Data Protection Officer (DPO) must ensure that the organization processes the personal data of its staff, customers, suppliers, or any other person (also referred to as data subjects) following the applicable data protection rules. The applicable Data Protection Regulation (Regulation (EU) 2018/1725) obliges EU institutions and agencies to appoint a DPO.

Data subject

A natural person who can be identified, directly or indirectly by a Controller, in particular by reference to personal data (Art. 4(1), GDPR).

Source: See the definition of data subject in Thomson Reuters.

Decision making/support system

A decision-making system's results determine which decision should be made. A decision support system is used as part of a decision-making process, especially one that is mediated by human action.

Deep learning

A subset of machine learning in artificial intelligence that has networks capable of learning unsupervised from data that is unstructured or unlabeled. Also known as deep neural learning or deep neural network.

Department/Institution/ National Office

Members of the IDB.

Source: Members of the IDB

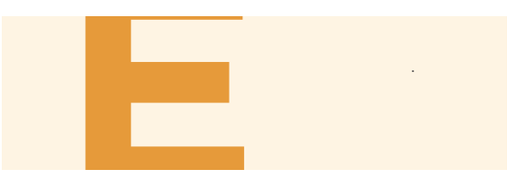
Developer

Stakeholders: Third parties involved in developing technological systems (AI, ICTs).

Source: IADB - Eticas Research and Consulting.

Digital decisioning platforms

Enable the implementation of power digital decisioning services and applications. The automated decisions based on AI, works fully automated workflow-based case-by-case decision. It contributes to accurate, precise and traceable decision making.



Explainability

The explainability of a decision-making or decision support system refers to the possibility that others can understand it through accessible information and that it is reproducible. The European Parliamentary Research Service defines it as the availability of explanations of algorithmic decision systems.

Source: See the study Understanding algorithmic decision-making: Opportunities and challenges by the European Parliament.

External organizations

Stakeholders: Third parties sharing personal data or project data with the IDB.

Source: IADB - Eticas Research and Consulting.

H

Hardware

Computers, cellphones, landline phones, radios and televisions, robots, cloud computing, databases, microphones, sensors, cameras, and speakers. Others: specify.

I

Identity authentication systems

Authentication systems make it possible to verify that someone or something is who or what it appears or claims to be.

Source: See "Guide on personal data breach management and notification" of the AEPD.

Information and Communication Technologies (ICTs)

Diverse set of technological tools and resources used to transmit, store, create, share or exchange information. These technological tools and resources include computers, the Internet (websites, blogs, and emails), live broadcasting technologies (radio, television, and webcasting), recorded broadcasting technologies (podcasting, audio and video players, and storage devices) and telephony (fixed or mobile, satellite, visio/videoconferencing, etc.).

Source: UNESCO

Informed Consent

Informed consent is the process by which participants voluntarily confirm their willingness to participate in a particular project, after having been informed of all the aspects relevant to their decision to participate. For consent to be informed, the data subject must at least know the identity of the controller and the purposes of the processing for which the personal data are intended (Recital 42, GDPR). Conditions for consent: 1. Where the processing is based on consent, the controller shall be able to demonstrate that the data subject has consented to the processing of their personal data. 2. If the data subject's consent is given in the context of a written declaration that also concerns other matters, the request for consent shall be presented in a clearly-distinguishable manner from the other matters, in an intelligible and easily accessible form, using clear and plain language. Any part of such a declaration that constitutes an infringement of this Regulation shall not be binding. 3. The data subject shall have the right to withdraw their consent at any time. The withdrawal of consent shall not affect the lawfulness of processing based on consent before its withdrawal. Before giving consent, the data subject shall be informed thereof. It shall be as easy to withdraw as to give consent. 4. When assessing whether consent is freely given, utmost account shall be taken of whether, inter alia, the performance of a contract, including the provision of a service, is conditional on consent to the processing of personal data that is not necessary for the performance of that contract. (Article 7, GDPR).

Source: See GDPR - Burden of Proof and Requirements for Consent. More details are available in the ICO's Guide to Data Protection.

Integrated system

Includes all hardware, software, and peripheral devices operated by a limited group of users.

Source: RAE (The Royal Spanish Academy)

M

Machine learning

Process of training data to a learning algorithm. The learning algorithm then generates a new set of rules, based on inferences from the data. This is generating a new algorithm, formally referred to as the machine-learning model. By using different training data, the same learning algorithm could be used to generate different models. eg pathology prediction etc.

Model documentation

Algorithmic model documentation systems are used to clearly establish the intended use cases of machine learning models and minimize their use in contexts for which they are not suitable. To this end, it is recommended to keep a structured record of the model variables listed in the recommendation (primary and secondary objectives, training data, algorithm versions, etc.) along with documentation detailing its performance characteristics.

Source: The algorithmic documentation system or "Model card" proposed by Mitchell et al. 2019.

N

Natural language generation

Subfield of artificial intelligence, is a software process that automatically transforms writing data into plain-language content.

Natural language processing (NPL)

Subfield of artificial intelligence, is a software process that automatically transforms reading data. NLP looks at language and figure out what ideas are being communicated. NPL systems start with a set of ideas locked in data and turn them into language that, in turn, communicates them.

Natural language understanding (NLU)

Subfield of artificial intelligence directly enables human-computer interaction. NLU enables computers to understand commands without the formalized syntax of computer languages and for computers to communicate back to humans in their own languages.

New/known problem

A “new” problem is one that the people or organization(s) who are designing, developing, and implementing an algorithm have not addressed previously. In contrast, a problem is “known” if it has been dealt with before, or if a project that is significantly similar on the basis of objective observations has been addressed.

Source: These definitions are based on Eticas Research and Consulting's previous works.

O

Officials

Members of the IDB

Source: IADB - Eticas Research and Consulting.

P

Personal data

“Personal data” means “any information relating to an identified or identifiable natural person (“data subject”); an identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person.”

Source: GDPR Art. 4

Problem

The issue that is intended to be solved by implementing the project.

Source: IADB - Eticas Research and Consulting.

Project

The focus of an ethical assessment.

Source: IADB - Eticas Research and Consulting.

Protocols in case of data leakage

In the event of the undesired leakage of the data contained in a system, notification systems make it possible to inform the person(s) concerned that this security problem has occurred and, where relevant, of the measures that will be taken in response. Action protocols may include notification systems like these and the planning of other actions to address or remedy the problem (e.g., data protection security systems, database deletion, etc.).

Source: See "Guide on personal data breach management and notification" by the AEPD.

R

Responsibility and accountability

Those responsible for these mechanisms are therefore the person(s) or group(s) of people or organizations who are directly involved in designing, developing and implementing the system and the project and who have acted with specific intentions and significant consequences, especially when these consequences have negative effects on others' lives. Algorithm responsibility defines the relationship between the party who is responsible for the system and the party who is affected by it.
Accountability refers to the acceptance of this responsibility by an individual, group, or organization. Specifically, it is the obligation to recognize and accept the consequences of operating a system and to provide redress and compensation to people who are negatively affected by it. It also contemplates responsibility for preventing and avoiding possible undesirable consequences in the future.

Source: The definitions of responsibility and accountability in this glossary are based mainly on relevant academic works and Eticas Research and Consulting's interpretation of previous works.

Robotics

Interdisciplinary research area at the interface of computer science and engineering. The goal of robotics is to design intelligent machines that can help and assist human's actions for different purposes.

S

Secondary processing

Secondary processing includes all those forms of processing that are not linked to the primary purpose for which the data were collected. The relevant data controller is legally obliged to communicate the chosen legal basis for processing to the data subjects (usually through privacy policies / notices) and also possible changes in the processing of personal data with respect to the original purpose of data collection.

Sensitive Data

"personal data revealing racial or ethnic origin, political opinions, religious or philosophical beliefs, or trade union membership (...) genetic data, biometric data for the purpose of uniquely identifying a natural person, data concerning health or data concerning a natural person's sex life or sexual orientation."

Source: GDPR Art. 9

Software

Artificial Intelligence; algorithms; computer programs, including text, audio, video and photo editing tools; visualizations.

Speech analytics

Process of analyzing voice recordings or live calls to contact centers with speech recognition software to find useful information and provide quality assurance. Speech analytics software identifies words and analyzes audio patterns to detect data.

T

Types of ICT

Types of information and communication technologies (ICTs). Hardware, software, and integrated systems.

V

Vulnerable group

Vulnerable groups or key protected groups include individuals who share one or more of the following protected attributes: Children and the elderly (age); having a disability or a physical or mental illness, gender (female) or gender reassignment; sexual orientation (LGTBIQ+); ethnic or racial origin, skin color, ancestry, national or immigrant status, or other factors relating to the origin of the person in question (race); pregnant women; political, religious or philosophical beliefs or opinions, trade union membership; genetic, biometric, or health-related information; property ownership or material resources; socioeconomic status and social class; information on criminal convictions and offenses. This is not an exhaustive list and should be adapted or modified according to each context.

Source: Classification prepared based mainly on Articles 6, 9, and 10 of the GDPR, those concerning the European Charter of Fundamental Rights, and other relevant texts. Disadvantaged groups defined according to the attributes mentioned in Article 21 (Non-discrimination) of the European Charter of Fundamental Rights: "sex (and gender), race, color, ethnic or social origin, genetic features, language, religion or belief, political or any other opinion, membership of a national minority, property, birth, disability, age, or sexual orientation."