AIAE - GLOSSARY

This glossary contains terms referring to AI and their definition in the alphabetical order.

TERM	DEFINITION
AI Act	Artificial Intelligence Act is a proposal released by the European Commission on 21th April 2021 and is intended to regulate AI technologies and AI systems to date across the European Union
Algorithm	A set of finite rules or instructions that are followed by a computer to solve a problem. Algorithms are the foundation for computer programming including machine learning.
Algorithmic trading	An automated process for executing orders utilizing automated and pre-programmed trading instructions in order to take into consideration variables such as price and volume. It is mainly used in the investment industry.
Alpha generation	Generation Y are the Millennials, people born between 1980 and 1994; Generation Z are people born between 1995 and 2009; Generation Alpha are people born between 2010 and 2024.
Artificial Intelligence (AI)	The theoretical and developmental framework that enables computer systems to accomplish tasks and activities normally requiring human intelligence. Applications like expert systems, natural language processing, speech recognition, machine vision and others are related to AI.
Assisted intelligence	It helps people to perform tasks (which they already do) faster and better with the support of technology (decision support systems) -- e.g. medical diagnosis, agri-food, structural monitoring

Augmented intelligence	It helps people to make better predictions / decisions by making new things possible that would otherwise be impossible without 'man-machine' collaborations, humans' reasoning schemes and big data correlations -- e.g. facial recognition, behavior predictions
Augmented reality	A technology putting people in realistic situations that are augmented by computer-generated video, audio, or sensory information. It functions by enhancing one's current perception of reality.
Automation	It uses a computer/machine to recognise repetitive patterns/tasks and to generalise them.
Autonomous car	A vehicle capable of sensing its environment and operating with limited or no human interaction.
Autonomous intelligence	It is an autonomous decision-making process of machines without human intervention, whereby software has full powers on execution and decisions -- e.g. cognitive computing, autonomous (driverless) cars.
Autonomous system	A system with the ability to accomplish a task, achieve a goal, or interact with its surroundings with minimal or no human involvement.
Autonomous weapon	A weapon system that can select and fire upon targets without any human intervention.
Bias	Data bias is when a sample of data does not accurately represent the population it is meant to represent. An AI system can develop bias towards a specific section of data simply because of their representation.
Big data	It refers to large, complex and heterogeneous volumes of data (open data, proprietary data, commercially purchased data). The evolution of big data along with cloud services and the capability to store large volumes of data, provides a foundation and strong support for machine learning and deep learning.
Blockchain	A distributable, immutable database recording information or transactions in a way that makes it difficult or impossible to change, hack, or cheat the system.
Catch-22 situation	A complex and problematic circumstance for which the only possible solution is inherent in the problem or a rule.
Chatbot	A specific type of artificial intelligence designed to replicate one side of human conversations, with the ultimate goal to carry on a conversation where the other person does not realise they are interacting with a robot.
Clean audio	Audio that is free from any distracting sounds or frequencies.

Cobots	Collaborative robots are designed to share a workspace with humans, making automation easier than ever before for businesses of all sizes.
Cognition	The mental action or process of acquiring knowledge and understanding through thought, experience and the senses.
Cognitive biases	A systematic error in thinking, leading to a strong, preconceived notion of someone or something based on information we have, perceive to have, or lack of it.
Computer vision	A field of artificial intelligence that trains computers to gain a high level understanding of the visual world. Object recognition, face recognition and gesture recognition belong to computer vision.
Convolutional neural networks (CNN)	A convolutional neural network, is a deep learning network specifically designed for processing structured arrays of data such as images and widely used in computer vision and have become common for applications such as image classification, natural language processing ang text classification.
Credential stuffing	Credential stuffing is a cyber-attack in which lists of compromised(stolen) usernames and passwords are used, in order to fraudulently gain access to user accounts.
Cryptocurrency	Any currency that exists digitally or virtually and uses cryptography for secure transactions. Cryptocurrencies also known as cryptos don't have a central issuing or regulating authority, they use a decentralized system to record transactions.
Data augmentation	A technique used to artificially expand the size of a training data set by creating modified data from the existing data.
Database	A systematic collection of data that stores organised information, usually in computer systems.
Dataset	A collection of defined and organised information in a way that makes the most sense for computer programmes to manipulate it.
Decision Support System (DSS)	A computer system/program used to support determinations, judgments, and courses of action in an organisation or a business.
Deep learning	A subfield of machine learning that feeds raw data through a neural network architecture which mimics the human way of processing information and relies on neural networks with many layers of neurons. Deep learning systems learn and improve on their own by exploring computer algorithms.

Destination Earth	A program coordinated by the European Commission that aims at developing a high precision digital model of the Earth to model, monitor and simulate natural phenomena and related human activities: https://digital-strategy.ec.europa.eu/en/policies/destination-earth
Earth Observation (EO)	The gathering of information about the physical, chemical, and biological systems of the planet Earth
Explainable Artificial Intelligence (XAI) / explainability	A set of processes and methods that allow humans to comprehend and trust the procedure, results and outputs created by machine learning algorithms, which is crucial for organizations in building trust and confidence in AI models
Facemesh	A Face Mesh is a 3D model of a face.
Faceprint	A digital scan of a human face, used for identifying an individual's unique characteristics of facial structure, that can be used for security purposes because it is as unique and individual as a fingerprint.
FinTech	FinTech refers to the use of technology by businesses in the financial sector in order to enhance or automate their services and processes and deliver innovative services to consumers.
Gesture recognition	A user interface that allows a computer or a machine to interpret human motions as commands. It is based on Computer Vision technology.
Graph neural networks (GNN)	Graph neural networks (GNN) are a machine learning algorithm that can extract information from graphs, representing the relations between entities, and make useful predictions.
Graphics interchange format (GIF)	File extensions used to store image files.
Heatmap	A two-dimensional representation of data in which values are represented by colours.
High dimensional data	High Dimensional means that the number of dimensions are extremely high – constituting calculations extremely difficult. With high dimensional data, the number of features can exceed the number of observations.
Human centric interface	An approach to developing interactive systems and their interfaces, by focusing on the users' needs and requirements.
Human dexterity	The ability of humans to use their fingers, hands and arms to perform a task and manipulate objects.
Human machine interaction	Interaction, communication and interfaces between humans and machines/computers
Image/object/face recognition	The ability of AI to detect an object or the face of a person, classify, and recognise it.

Information and communications technology (ICT)	A broader term for Information Technology (IT), which refers to all communication technologies, including the internet, wired and wireless networks, cell phones, computers, video-conferencing, social networking, and other applications and services enabling users to access, retrieve, store, and manipulate information in digital form.
Interactivity	The communication process that takes place between humans and computer software
Interface	A hardware device or a programme enabling a user to interact with a computer or computers to communicate with each other.
Iteration	The repetition of a process or a computational procedure.
Lethal autonomous weapons (LAW)	A weapon system that use sensors and computer algorithms to independently identify a target to engage and destroy the target without manual human intervention.
Machine learning	A subset of artificial intelligence which teaches computers to think like humans by exploring data, identifying patterns and learning from them. Supervised learning allows you to collect data or produce a data output from a previous ML instance while unsupervised learning can identify all kinds of unknown patterns in data.
Machine translation	A sub-field of computational linguistics which consists of using a software to translate text or speech from one language to another one.
Mixed reality	A technology facilitated by advancements in computer vision, graphical processing, display technologies, input systems, and cloud computing, enabling the blending of real and digital world elements allowing users to manipulate physical and virtual items and environments.
Model /Machine learning model / AI model	A software program that has been trained using a set of data to perform specific tasks like recognizing patterns, performing analytical tasks and decision-making tasks.human might do to solve the same problem.
Neural network	A specific type of artificial intelligence that is composed of several separate computer algorithms, mimicking human brain, aiming to identify relationships in a set of data.
Optical character recognition	A technical solution that automates data extraction from printed or written text from scanned documents or image files and then converts the text into a machine-readable form in order to be used for data processing like editing or searching

Perceptual user interface	An interface that allows computer systems to interact with users by "perceiving," interpreting, and responding to patterns of communication like facial expressions, speech and gestures, typical of users.
Popular artifical intelligence (Pop Ai)	Brings artificial intelligence closer to people, explains what AI is and promotes its benefits through an experiential approach. Home - POP Ai
PoseNet	A real-time detection technique with which one can detect the poses of human beings in an Image or Video file.
Programming	The process of enabling or programming a computer to perform a task by creating a program that will instruct a computer how to perform it. It is facilitated by a number of computer programming languages, like JavaScript, C++ and Python.
Recidivism algorithm	Recidivism algorithms are used for assessing a criminal defendant's likelihood of committing a crime
Regression analysis model	Regression analysis is a statistical method used in various disciplines that attempts to determine the strength and character of the relationship between one dependent variable and a series of other variables, known as independent variables.
Robotics	A branch of engineering that involves the conception, design, manufacturing and operation of robots, where programmable machines are built that can assist humans or mimic human actions.
Speech/voice recognition	The ability of a machine or a computer to recognise spoken language and carry out voice commands
Statistical models	A mathematical model that comprises of the assumptions undertaken to describe the data generation process.
Supervised learning	Most common sub-branch of machine learning, referring to how a machine learning programme is given data to learn from: The programme is given clearly sorted and labelled data and is explicitly programmed to sort out those exact labels.
Telecommunications	The exchange of information over large distances by electronic means and all types of voice, data and video transmission.
Training data	An extremely large data set used to train an algorithm or a machine learning model, to make predictions.

Training process	The process of training an AI system, in order to properly interpret data and learn from it so it can perform specific tasks with accuracy.
Two-factor authentication	Two-Factor Authentication (2FA) is an information security layer requiring an additional login credential, beyond just the username and password, in order for a user to gain account access, through a device or program that belongs to the user.
Unsupervised learning	It refers to how a machine learning programme is given data to learn from and involves the programme sorting and classifying the data on its own, based on trends and correlations that it sees in the data.
User experience	Refers to how a user interacts with and experiences a computer system.
User profiling	The process of identifying data and information related to a user in a specific domain. The data gathered can be used by the system to understand more about the user, customise her/his experience or add the user in a specific category.
Virtual reality	An environment generated by computer-generated environment with scenes and objects that appear to be real, making the user feel they are immersed in their surroundings. This environment is perceived through a device known as a Virtual Reality headset or helmet