# Appendix 1: Key concepts

**Algorithms:** Technology that makes calculations in order to solve problems. Can be used, among other things, for ranking, filtering and sorting (Svensson 2023).

**Artificial intelligence:** Collective name for a variety of digital technologies whose purpose is to imitate human behaviors such as reasoning, planning, seeing patterns and learning (Bäck 2023).

**Biased data:** Data that is not representative of the subject or phenomenon that it is intended to describe. When AI models are trained on biased data sets, this leads to flaws in the models. (Wärnestål 2023, p.230).

**Blockchain Technology:** A decentralized digital ledger that records transactions across many computers in such a manner that the registered transactions cannot be altered retroactively. This technology provides a high level of security and is foundational for creating tamper-proof records of content generated by journalists (Nakamoto 2008).

**Consensus Mechanisms:** A core component of blockchain technology. It ensures that all participants in the network agree on the validity of transactions. This mechanism prevents fraud and ensures that each copy of the distributed ledger is identical and accurate (Lamport, Shostak, and Pease 1982).

**Cryptography:** The practice and study of techniques for secure communication in the presence of third parties called adversaries. Cryptography is essential for ensuring the security of transactions on the blockchain, including the transmission of journalistic content (Diffie and Hellman 1976).

**Decentralized Applications (DApps):** Applications that run on a P2P network of computers rather than a single computer, enabling a new way of interacting with the internet and digital content without intermediaries. This is relevant for distributing journalistic content in a decentralized manner, which ensures wider access and integrity (Buterin 2015).

**Decentralized Autonomous Organizations (DAOs):** Structures that are typically run on dApps and are not managed by any central governing authority but through code in a democratic pre-defined set of rules (El Faqir et al. 2020).

**Deepfake:** Digital media created using AI and algorithms. Realistic films, audio or photographs, which are not real, are generated using real photo and video material. Also includes voice generation and audio material (Wärnestål 2023, p.238).

**Digital Signature:** A mathematical scheme for verifying the authenticity of digital messages or documents. A valid digital signature gives a recipient reason to believe that the message was created by a known sender (Rivest, Shamir, and Adleman 1978).

**Ethical AI:** Refers to the practice of designing, developing, and deploying AI with good intention to empower employees and businesses and fairly impact customers and society, allowing for accountability and fairness in automated decisions (Mittelstadt et al. 2016).

**Generative AI:** AI that can generate completely new material, such as images, text, video or sound, based on material (data) that it has been training on (Bäck 2023).

**Hallucinations:** Phenomena that occur when generative AI, primarily language models, lack information when it generates material. The AI then invents its own information and facts without grounding in reality, which it presents convincingly and confidently (Thorbecke 2023).

**Machine learning:** The largest field in modern AI. Entails the development of methods to train computers to discover patterns and rules by using data, and differs from traditional AI in that the technology independently solves tasks without having been programmed for it (Wärnestål 2023, p.223).

**Privacy-preserving Technologies:** Technologies that protect users’ privacy by ensuring that their data cannot be accessed by unauthorized parties. This is crucial for protecting the sources and integrity of journalistic content (Chaum 1983).

**Smart Contracts:** Self-executing contracts with the terms of the agreement directly written into lines of code. They run on a blockchain, making the contract tamper-proof and ensuring that agreed-upon actions are executed automatically when conditions are met (Szabo 1997).

**Tokenization:** The process of converting rights to an asset into a digital token on a blockchain. This concept can be applied to digital rights management for journalistic content, ensuring creators retain control and receive fair compensation (De Filippi and Wright 2018).

**Web3:** A blockchain-based framework representing a paradigm shift toward empowering users with control over their data. It uses blockchain technology, cryptocurrencies, and non-fungible tokens (NFTs) to enhance data ownership and privacy (Voshmgir, 2020).

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