

Artificial Intelligence: Principles & Definitions

1.0 Overview

Artificial intelligence (AI) technologies offer a wide range of opportunities to make government run better for New Yorkers. Prudent use of AI can improve operational efficiency, enhance service delivery, promote social equity and environmental sustainability, and more. In fact, New York City agencies have leveraged AI for many years to support a wide array of tasks, including providing access to limited resources and services, translating the city’s website, and tracking public health.

At the same time, use of AI systems can pose a range of risks for individuals and communities, whether due to lack of appropriate governance, misuse, flawed design, or other factors – including inaccuracies or fabricated content, misallocation of government resources, cybersecurity risks such as new attack vectors or information disclosure, among others. On a broader environmental and social scale, AI usage can be costly, consume large amounts of energy and water, generate excess carbon emissions, create electronic waste, impact workers’ job quality and security, and more broadly perpetuate discriminatory biases and social inequality. The complexity and indiscernible mechanics of many AI applications also pose unique transparency and accountability challenges, which are particularly pronounced for governments providing services to the public.

For New York City agencies to use AI effectively and responsibly, it is necessary to acknowledge and balance these potential risks and benefits. These guidelines seek to support agencies in that effort, and help ensure city adoption of AI serves the public good.

2.0 Purpose

The purpose of these guidelines is to establish core principles to support agency use of AI, and to create accessible, standardized definitions for key terms that may be adapted citywide. These guidelines will be updated as needed to reflect the changing technology ecosystem.

3.0 Authority

The Office of Technology and Innovation (“OTI”) was formed under Mayoral Executive Order 3 of 2022 (“EO 3”) in order to unify technology teams across government and centralize coordination around existing and emerging technologies. OTI serves as the city’s central technology agency, leading “the development, coordination and implementation of the city’s information technology, information security, information privacy and telecommunication matters.” This guideline is issued under EO 3.

4.0 AI Principles

The New York City AI Action Plan of 2023 commits the city to designing and implementing a robust governance framework that aligns the city’s use of AI with a defined set of principles. While these principles have been developed with reference to other efforts to codify AI principles, notably the 2022 White House’s Blueprint for an AI Bill of Rights,¹ the New York City AI Principles (“AI Principles”) reflect the particular needs and priorities of New York City, its agencies, and its residents. OTI encourages agencies to consider these principles as they develop and use AI solutions. Subsequent guidance and policy published by OTI will incorporate these principles to help ensure that they are integrated into all facets of city AI governance.

4.1 Validity and Reliability

AI has great potential to address many problems faced by the city. However, AI systems are not one-size-fits-all solutions, and, like traditional technology tools, should be used, developed, and

implemented in ways that are responsive to existing problems. Performance of AI systems can also depend on their design or maturity, and that performance may change over time, based on factors such as modifications to models, data drift, or context of use.

The city should therefore assess whether AI solutions are valid for their tasks and seek to ensure that they rely on appropriate data, metrics, and assumptions to solve the problem at hand. The city should also carefully monitor AI systems—from ideation to deployment—to ensure that those systems are performing reliably, especially as conditions change over time or systems are adapted to address new use cases.

4.2 Social Responsibility

The integration of AI can support social responsibility. For example, AI systems can act more consistently than humans, or allow for the more efficient allocation of work, energy, or other resources. However, without appropriate safeguards in place, AI-assisted decision-making can result in unfair or inequitable outcomes for individuals or groups. And the often larger scale of AI deployment can amplify erroneous or biased outcomes. The integration of AI systems can also have negative impacts on workers' job quality or security, or introduce concerns about workplace surveillance. Additionally, the development and use of AI can be costly, use large amounts of energy and water, and increase carbon emissions and pollution.

When procuring, developing, and implementing AI solutions, city agencies should seek to ensure that systems operate with fairness and equity. Agencies should consider tactics such as examining training data for biases, conducting robust testing of systems, performing appropriate risk assessments, engaging the public to obtain feedback on impact and support effective mitigations, monitoring deployed systems, and integrating humans-in-the-loop for decision-making. Agencies should also take steps to ensure that the AI systems they employ support rather than degrade job quality and security for New Yorkers, including city employees.² Finally, agencies should carefully weigh an AI system's benefits against its costs and environmental impacts, and seek to align their use with broader city sustainability goals.³

Across these areas, OTI is actively developing resources to support agency efforts, and to surface and share emerging methods and best practices.

4.3 Information Privacy

Data is foundational in the development and use of AI, from training models to achieve desired objectives, to acting as inputs to generate new predictions, estimates, or other content. New York City recognizes, accordingly, that use of AI solutions may require agency collection, use, or disclosure of identifying information, which is governed by New York City's Identifying Information Law.⁴

Where AI development and use involves collection, use, disclosure, or retention of identifying information,⁵ New York City agencies must continue to comply with the Identifying Information Law and the Citywide Privacy Protection Policies and Protocols.⁶ This includes consideration of New York City's privacy principles,⁷ which should be honored in all aspects of agency decision-making and operations impacting information privacy. Agencies should also use the Privacy Impact Assessment (PIA)⁸ in the Agency Privacy Officer Toolkit to help implement the privacy principles while developing and using AI solutions.

In order to promote confidence in the city’s adoption of AI and its lawful and responsible data stewardship, and protect New Yorkers from potential unlawful and unethical uses of their data, the city must commit to extending existing privacy protections in agency AI development and use, and modify those protections as necessary to keep pace with technological advances.

4.4 Cybersecurity

The city can collectively harness the benefits of AI through secure enablement, with a continued mission to make New York City the most resilient city in the world. Security is central to the trustworthiness of AI technologies and its integration into the city’s digital infrastructure. As technology continues to evolve, so will the cyber threat landscape. This demands further development of protections to thwart both traditional cyber threats, and those unique to AI such as novel machine-learning attacks. Accordingly, it is important that the city builds and leverages AI systems with security and resilience in mind, which includes the foundational elements of secure by design, and thoughtful investment in the expansion of citywide cybersecurity defenses.

The city is committed to advancing cybersecurity strategies that align with the global rise of AI, and bolstering preparedness for both current and future threats. This includes using public-private partnerships to strengthen secure-by-default practices, ensuring solutions are in alignment with citywide cybersecurity policies, and updating those policies to be reflective of the shifting technology ecosystem.

4.5 Trust and Transparency

New Yorkers reasonably expect to know how their government is working for them, and to understand the systems that agencies use to serve the public. It can be challenging to engender trust and understanding about public sector technology generally, as systems may be complex or require technical subject matter expertise to understand. These challenges are often greater with AI due to the complexity or opacity of the systems themselves, the varied impacts of their use on individuals and communities, broader discomfort with using technological systems in contexts and processes historically managed by humans, potential negative past experience with the use of such systems, or other factors.

In order to encourage greater public trust in the city’s use of AI, agencies should carefully consider whether public engagement, disclosure or explanation of AI use, or human alternatives/fallback mechanisms may be beneficial. To this end, it is critical to understand how a given system may impact residents’ safety, rights, or access to services, which may require interdisciplinary collaboration or direct engagement with impacted communities. Additionally, the city will continue to report on the use of “algorithmic tools” (including many AI systems) with a public impact on decision-making.⁹

5.0 Definitions

5.1 Objective and Use

The foundation of a strong policy framework is the common understanding of key terms. Thus, the standardization of AI terminology will enable better support for agency implementation of AI projects and improved public accountability. OTI strongly encourages all agencies to integrate

these definitions into their own policies or business governance practices. These terms will be updated or expanded periodically to reflect technological advances.

5.2 Approach

Definitions related to AI vary in terms of their historical use, the presence of widespread agreement across other organizations, and the precise boundaries of concepts that they represent. To acknowledge this variability, and the fact that other organizations including governments have begun efforts to standardize terminology, OTI has developed its definitions by referencing existing sources where available. Section 5.3 provides the list of defined terms, the definition for each, and additional notes or references to further explain the development of the definition.

5.3 Defined Terms

5.3.1. Fundamental Concepts

AI. Acronym of Artificial Intelligence..

AI Governance. The processes within organizations that oversee, direct the desired outcomes of, establish accountability for, and manage the risks of, the design, development, deployment, evaluation, and/or acquisition of AI. systems, both present and future.¹⁰

Algorithm. A set of instructions that can be programmed and followed by a computer.

Algorithmic Tool. Any technology or computerized process that is derived from machine learning, artificial intelligence, predictive analytics, or other similar methods of data analysis, that is used to make or assist in making decisions about and implementing policies that materially impact the rights, liberties, benefits, safety or interests of the public, including their access to available city services and resources for which they may be eligible. Such term includes, but is not limited to tools that analyze datasets to generate risk scores, make predictions about behavior, or develop classifications or categories that determine what resources are allocated to particular groups or individuals, but does not include tools used for basic computerized processes, such as calculators, spellcheck tools, autocorrect functions, spreadsheets, electronic communications, or any tool that relates only to internal management affairs such as ordering office supplies or processing payments, and does not materially affect the rights, liberties, benefits, safety or interests of the public.¹¹

Artificial Intelligence. A machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations, or decisions influencing real or virtual environments. Artificial intelligence systems use machine- and human-based inputs to perceive real and virtual environments; abstract such perceptions into models through analysis in an automated manner; and use model inference to formulate options for information or action.¹²

Automation. Independent machine-managed choreography of the operation of one or more digital systems.¹³

Computer Vision. The digital process of perceiving and learning visual tasks in order to interpret and understand the world through cameras and sensors, including Optical Character

Recognition (OCR), the identification of objects in images and videos, and more.¹⁴

Function. A unit of computation that takes zero or more inputs and produces at least one output.¹⁵

Generative Artificial Intelligence. Any AI system whose primary function is to generate content, which can take the form of code, text, images, and more.¹⁶

Identifying Information. Any information obtained by or on behalf of the city that may be used on its own or with other information to identify or locate an individual.

Machine Learning. The study of computer algorithms that improve automatically through data, a subcategory of artificial intelligence.¹⁷

Note: These algorithms differ from rules-based programming as they build a model based on training data to complete a task with minimal human intervention.

Materially Impact. To have, through a system's outputs or outcomes, a discrete, discernible, or otherwise identifiable effect that: 1. limits or suspends rights or liberties; OR 2. determines the eligibility for, the type of, or quantity or magnitude of benefits, city services, and/or resources; OR 3. changes the risk of harm to a person or group of people; OR 4. produces or edits information provided to the public.

Natural Language Processing. The ability of a machine to process, analyze, and mimic human language, either spoken or written.¹⁸

Optimization. The computation of a solution to maximize or minimize an objective function, often subject to constraints on the variables.¹⁹

Predictive Model. A model used for forecasting outcomes based on anticipated future values of input variables.²⁰

Robotic Process Automation. A preconfigured software instance that uses business rules and predefined activity choreography to complete the autonomous execution of a combination of processes, activities, transactions, and tasks in one or more unrelated software systems to deliver a result or service with human exception management.²¹

5.3.2. Data Types

Audio. A Sequence. of waveform amplitudes or other Time Series. with the perceptual quality of sound.

Parent Term: Time Series.

Collection. A Data Type. describing multiple elements, whose order of appearance is irrelevant.²²

Data Type. An attribute of data which describes the possible values the data may take, as well as the operations that are allowed on that data.²³

Image. A Nominal Data Type. containing information that can be perceived visually.
Parent Term: Nominal Data Type.

Match. A Collection. of Pair..
Parent Term: Collection.

Nominal Data Type. A Data Type. that describes two or more categories which cannot be compared to determine which one is greater, or whose ordering is not relevant to the use case.²⁴
Parent Term: Data Type.

Numerical Data Type. A Data Type. that can be manipulated with arithmetic operations.²⁵
Parent Term: Data Type.

Ordinal Data Type. A Data Type. that describes two or more categories, such that every pair of categorical labels can be compared to determine which one is greater.²⁶
Parent Term: Data Type.

Pair. A Tuple. consisting of two elements, which represents a relationship between them.
Parent Term: Tuple.

Sequence. A Data Type. describing multiple elements, whose number may change each time a function is executed, and whose order of appearance is relevant.²⁷
Parent Term: Data Type.

Tabular. A Collection. of Tuple..
Parent Term: Collection.

Text. A Sequence. of characters with the perceptual quality of written language.
Parent Term: Time Series.

Time Series. A Sequence. whose ordering has the interpretation of progression in time. The elements may themselves be Pair. relating timestamps to some other data.
Parent Term: Sequence.

Tree. A Data Type. describing multiple elements where some elements, but not all, can be ordered.²⁸
Parent Term: Data Type.

Tuple. A Data Type. describing a fixed number of multiple elements, whose order of appearance is relevant.²⁹
Parent Term: Data Type.

Video. A Sequence. of Image. with the perceptual quality of vision, possibly accompanied with Audio. and Text. as well.
Parent Term: Time Series.

5.3.3. AI Types

As-a-Feature. The provision of AI. through an existing software system as a component that offers new or enhanced functionality.

Parent Term: Distribution.

As-a-Service. The provision of AI. through an application programming interface (API).

Parent Term: Distribution.

Autonomy. The extent to which the Operator. is involved in acting on the AI. system's outputs.³⁰

Biological Sample. Any material that originates from a living organism which is collected for the purpose of analysis.

Parent Term: Subject.

Build Time. The part of the lifecycle of an AI. system referring to the development of an AI. model. At Build Time, i) a model is created or changed, and ii) the environment is not influenced by the AI..³¹

Note: Activities that may be part of Build Time include: requirements gathering; data engineering, including the redaction of Identifying Information, or information classified as Sensitive and Restricted; user studies to collect and prepare the training data; legal approvals for the use of data, which may include Identifying Information; preparation of computational infrastructure and environments to execute training and inference algorithms; training of a new model or updating an existing model, model design and selection; hyperparameter tuning or fine-tuning; model validation; risk assessment and mitigation, including of privacy-related risks and cybersecurity risks; pre-deployment fairness audits of training data; adversarial testing to prevent data poisoning and manipulation; regulatory and compliance checks, and integration of the AI. system into a larger organizational process. In modern AI. systems, Build Time can involve repeated trial and error to build and test many versions of computation models. The number of models tried can be in the thousands or millions.

Antonym of: Use Time.

City Entity. An agency, office or other organization that is part of the City of New York.

Note: An Agency is a City Entity, but not all City Entities are Agencies.

Antonym of:

Classification. A Function. whose output Data Type. is a Nominal Data Type. or Ordinal Data Type..

Parent Term: Computation.

Note: In Machine Learning., a Classification model is a type of supervised learning algorithm used to categorize input data into predefined categories. It is sometimes useful to further distinguish Classification into two subtypes. If the categories are ordered, the categories are considered an Ordinal Data Type. and the model is said to be an Ordinal Classification. model ; otherwise, the categories define a Nominal Data Type. and the model is a Nominal Classification. model.

Cross-reference: Nominal Data Type., Ordinal Data Type., Function.

Do not confuse with: Scoring.

Cloud Server. A server which is not owned by the Owner. of an AI. system.

Parent Term: Server.

Clustering. A Computation. which takes as input a Collection., and assigns each element of the Collection. a label whose Data Type. is a Nominal Data Type., Ordinal Data Type. or Tree..

Parent Term: Computation.

Note: In Machine Learning., a Classification. model is a type of supervised learning algorithm used to categorize input data into predefined categories. It is sometimes useful to further distinguish Classification. into two subtypes. If the categories are ordered, the categories are considered an Ordinal Data Type. and the model is said to be an Ordinal Classification. model ; otherwise, the categories define a Nominal Data Type. and the model is a Nominal Classification. model.

Cross-reference: Nominal Data Type., Ordinal Data Type., Tree.

Computation. The Algorithm. by which an AI. model processes the inputs and produces the output(s).

Note: Unless otherwise specified, the Computation facet is assumed to refer to Inference Algorithm., i.e., Use Time..

Cross-reference: Algorithm., Function.

Data Management. A system that provides access to data, stores and monitors data, and controls input-output operations within a data processing system.³²

Parent Term: Purpose.

Note: Data management systems may perform one or more of tasks such as: deduplication of redundant entries, data cleaning by identifying anomalous entries, data validation ensuring that values are within expected ranges, imputing missing data, redaction of any sensitive or private data, data fusion to combine data records from multiple data sources, and disambiguating different entities with the same name.

Data Owner. The entity who is responsible for collecting data about Subject. and governing the use of such data.

Parent Term: Stakeholder.

Cross-reference: Subject.

Data Transformation. Any Function. which does not fit into any of the other categories of Computation..

Parent Term: Computation.

Developer. The entity who, at Build Time., constructs the AI. system.

Parent Term: Stakeholder.

Cross-reference: Build Time.

Distribution. The mode by which an AI. system is structured within a larger system, with particular regard to how such functionality is provisioned to an Operator..

Edge Device. Any component that perceives input data and performs Computation., using input data perceived from the same component or subsystem.

Parent Term: Infrastructure.

Facet. Any semantic category in a Faceted Typology..

Cross-reference: Faceted Typology.

Faceted Typology. A Typology. that uses semantic categories which in combination create a Type..³³

Parent Term: Typology.

Cross-reference: Facet.

Forecasting. A Function. which takes as input a Sequence. whose elements are of some Data Type., X, and outputs either a value of Data Type. X or another Sequence. whose elements are of Data Type. X.

Parent Term: Computation.

Fully Autonomous. The AI. system acts on its outputs without any Operator. intervention.³⁴

Parent Term: Autonomy.

Geographic Space. A spatial region consisting of some combination of natural elements like soil, vegetation and wildlife; manufactured elements like buildings and infrastructure; and human elements of society and culture from its inhabitants.

Parent Term: Subject.

Group. A collection of individuals, which may be either formally incorporated as an organization or business, or informally aggregated.

Parent Term: Subject.

Hierarchical Clustering. A Clustering. Computation. whose output Data Type. is a Tree..

Parent Term: Clustering.

Cross-reference: Tree.

Individual. A specific resident, visitor or other human relevant to the city.

Parent Term: Subject.

Inference Algorithm. An Algorithm. that is executed at Use Time. to produce the desired outputs.

Parent Term: Algorithm.

Information Presentation. A system that organizes, summarizes and displays text and/or data in formats designed for communicating facts, concepts or results to an audience.

Parent Term: Purpose.

Informative. The AI. system does not act on its output. The Operator. uses or disregards the AI. system's outputs at will.³⁵

Parent Term: Autonomy.

Infrastructure. The collection of information technology components that collectively support the functionality of an AI. system.

Matching. A Function. which takes as input two Collection., and pairs each element of the first Collection. with an element from the second Collection..

Parent Term: Computation.

Note: A Matching computation often involves the use of Optimization. algorithms to produce the best possible match, often in the presence of constraints.

Cross-reference: Optimization.

Do not confuse with: Ranking.

Monitored. The AI. system acts on its outputs unless the Operator. overrides the action.³⁶

Parent Term: Autonomy.

Nominal Classification. A Function. whose output Data Type. is a Nominal Data Type..

Parent Term: Classification.

Cross-reference: Nominal Data Type.

Nominal Clustering. A Clustering. Computation. whose output Data Type. is a Nominal Data Type..

Parent Term: Clustering.

Cross-reference: Nominal Data Type.

Non-City Entity. An organization outside of the City of New York.

Antonym of: City Entity.

On-Premise Server. A server which is owned by the Owner. of an AI. system.

Parent Term: Server.

Operator. The entity who, at Use Time., provides the input data to the computational model, oversees the execution of the computational model, and obtains its outputs.

Parent Term: Stakeholder.

Cross-reference: Use Time.

Ordinal Classification. A Function. whose output Data Type. is an Ordinal Data Type..

Parent Term: Classification.

Cross-reference: Ordinal Data Type., Function.

Ordinal Clustering. A Clustering. Computation. whose output Data Type. is an Ordinal Data Type..

Parent Term: Clustering.

Cross-reference: Ordinal Data Type.

Other (Infrastructure). Any other Infrastructure. component.

Parent Term: Infrastructure.

Other (Subject). Any other Subject. not belonging to any of the categories above.

Parent Term: Subject.

Owner. The entity who at Build Time., identifies the purpose for the AI. and supervises its

development or procurement; and at Use Time., is responsible for overall management of the AI. system.

Parent Term: Stakeholder.

Cross-reference: Build Time.

Performance Evaluation. A system that judges whether, or measures the extent to which, the outputs of a system fulfill some predefined requirements.³⁷

Parent Term: Purpose.

Personal Computing Device. A general-purpose computing device designed for individual use.

Parent Term: Infrastructure.

Property. A possession owned by an individual or entity.

Parent Term: Subject.

Purpose. The role the AI. system is intended to play in city government.

Ranking. A Function. which takes as input a Collection. and another input, and produces a Sequence. whose elements are selected from the Collection..

Parent Term: Computation.

Do not confuse with: Matching., Sampling.

Resource Allocation. A system that assigns or distributes available resources.

Parent Term: Purpose.

Sampling. A Function. which takes as input a Collection., and produces a Collection. whose elements are selected from the Collection..

Parent Term: Computation.

Do not confuse with: Ranking.

Scoring. A Function. whose output Data Type. is a Numerical Data Type..

Parent Term: Computation.

Note: In Machine Learning. and statistics, Scoring models are also known as regression models.

Cross-reference: Numerical Data Type.

Do not confuse with: Classification.

Server. A centralized component designed to perform Computation., with inputs received from, and outputs sent to, other components connected over a network.

Parent Term: Infrastructure.

Servicer. The entity who, at Use Time., consumes the outputs of the AI. system and is responsible for rendering services to the Subject..

Parent Term: Stakeholder.

Note: The Servicer is not relevant for Fully Autonomous. AI. systems.

Cross-reference: Use Time., Subject.

Stakeholder. An entity who, together with other stakeholders, is responsible for building, using and managing the AI. system, or is otherwise affected by the use of the AI. system.

Standalone. The provision of AI. through software that is procured or developed as a self-contained system.

Parent Term: Distribution.

Subject. The target for whom data is collected about, and the recipient of services provided. At Build Time., data about Subjects are collected by the Data Owner., to be provided to the Developer. to train the AI. model. At Use Time., data about Subjects are collected by the Data Owner., to be provided to the Operator. to use the AI. model; and the Servicer. acts on the Subjects based on the outputs of the AI. model provided by the Operator..

Parent Term: Stakeholder.

Cross-reference: Servicer., Operator., Data Owner., Build Time., Use Time.

Supervised. The AI. system can act on its outputs, but requires explicit permission from the Operator. to do so.³⁸

Parent Term: Autonomy.

Training Algorithm. An Algorithm. that is executed at Build Time. to produce a computational model.

Parent Term: Algorithm.

Triage. A system that performs initial assessments of incoming cases to determine their importance and assignment of priorities for follow-up action. It applies one or more criteria to determine the most important items that require attention through a follow-up action.³⁹

Type. Any class belonging to a Typology..

Note: The study of types is a rich subject in computer science, where it goes by the name of type theory.⁴⁰

Cross-reference: Typology.

Typology. Any analysis of a particular category of phenomena into classes based on common characteristics.⁴¹

Note: A typology is a classification scheme that defines a baseline set of characteristics that should always be considered when describing its constituent types. A typology describes the essential characteristics of its types, while being deliberate in omitting many other details. By specifying these characteristics, this typology also helps understand the similarities and difference between types.

Cross-reference: Type.

Use Time. The part of the lifecycle of an AI. system referring to the deployment of an AI. model to serve its Purpose.. At Use Time, i) the model is not changed, and ii) the environment is influenced by the AI..

Note: Activities that may be part of Use Time include: logging of performance metrics and unexpected outputs; monitoring of operational issues, such as erroneous outputs or downtime, monitoring for cyber threats such as unauthorized access and adversarial attacks; maintenance of the execution environment of the model; collecting user feedback about the AI. system's functioning; change management, including retraining of models to adapt to new data; ongoing risk mitigation; and measurement of data drift detection.

Antonym of: Build Time.

6.0 Ownership

This guidance is provided by OTI's Strategic Initiatives Division. For questions related to this document, please reach out to your Agency Relations Manager.

7.0 Related Laws, Policies, Requirements and Processes

7.1 Laws

- New York State Freedom of Information Law: NYS Public Officers Law, §§ 84-90
- New York City Open Data Law: NYC Administrative Code §§ 23-501 through 23-506
- New York City Identifying Information Law: NYC Charter 8(h) and NYC Administrative Code §§ 23-1201 through 23-1205
- [Local Law 35 of 2022](#): NYC Administrative Code § 3-119.5
- Local Law 144 of 2021: Rules of the City of New York, §§ 5-300 through 5-304

7.2 Citywide Policies

- New York City AI Action Plan of 2023
- Citywide Cybersecurity Policies and Standards
- [Citywide Privacy Protection Policies and Protocols of the Chief Privacy Officer, City of New York](#)

7.3 Processes

- Cloud Review
- Procurement
- Software Security Assurance Process (SSAP)

7.4 Agency-Specific Policies

- Various internal business processes and use policies
- Agency cybersecurity policies
- Agency privacy policies
- Agency Acceptable Use Policies

8.0 References

Alan Agresti, Analysis of Ordinal Categorical Data, John Wiley & Sons: Hoboken, NJ, April 2010, doi:10.1002/9780470594001.

American Psychological Association Dictionary of Psychology, April 19, 2018, <https://dictionary.apa.org>.

Benjamin C. Pierce, Types and Programming Languages, MIT Press: Cambridge, MA, 2002.

Donald Ervin Knuth, The Art of Computer Programming, Vol. 2: Seminumerical Algorithms, Addison-Wesley: Reading, MA, 3rd ed., November 1997.

Douglas John Foskett, The Construction of a Faceted Classification for a Special Subject, in Proceedings of the International Conference on Scientific Information, National Academy of Sciences, 1959, pp. 867–888, doi:10.17226/10866.

Helen Toner, What Are Generative AI, Large Language Models, and Foundation Models?, Center for Security and Emerging Technology, May 12, 2023, <https://cset.georgetown.edu/article/what-are-generative-ai-large-language-models-and-foundation-models/>; archived at <https://web.archive.org/web/20250822172509/https://cset.georgetown.edu/article/what-are-generative-ai-large-language-models-and-foundation-models/>.

IEEE Guide for Terms and Concepts in Intelligent Process Automation, IEEE Std 2755-2017, Sept. 28, 2017, doi:10.1109/IEEESTD.2017.8070671

ISO 21110:2019(en), Information and documentation — Emergency preparedness and response

ISO 37002:2021(en), Whistleblowing management systems — Guidelines.

ISO 9001:2015(en), Quality management systems — Requirements.

ISO/IEC 20944-1:2013(en), Information technology — Metadata Registries Interoperability and Bindings (MDR-IB) — Part 1: Framework, common vocabulary, and common provisions for conformance.

ISO/IEC 38500:2024(en) - Information technology — Governance of IT for the organization.

Leo Breiman, Statistical Modeling: The Two Cultures, *Statistical Science* 16(3): 199-231, 2001, doi:10.1214/ss/1009213726.

Local Law 35 of 2022, Administrative Code of the City of New York, § 3-119.5.

Martín Abadi and Luca Cardelli, *A Theory of Objects*, Springer-Verlag: New York, 1996, doi:10.1007/978-1-4419-8598-9.

Matthew Hutson, AI Glossary: Artificial Intelligence, *In So Many Words*, Science, July 7, 2017.

National Artificial Intelligence Initiative Act of 2020, 15 U.S.C. ch. 119 § 9401(3).

National Institute of Standards and Technology (NIST), *The Language of Trustworthy AI: An In-Depth Glossary of Terms*, March 29, 2023, doi:10.6028/NIST.AI.100-3.

National Security Commission on Artificial Intelligence, National Security Council on Artificial Intelligence: *The Final Report*, 2021, <https://www.nsc.ai.gov/2021-final-report/>.

NIST Artificial Intelligence Risk Management Framework (AI RMF), NIST AI 100-1 v1.0, January 2023, doi:10.6028/NIST.AI.100-1.

OECD Explanatory memorandum on the updated OECD definition of an AI system, in *OECD Artificial Intelligence Papers No. 8*, March 2024, OECD Publishing: Paris, doi:10.1787/623da898-en.

OECD Framework for the Classification of AI Systems, in *OECD Digital Economy Papers No. 323*, February 22, 2022, OECD Publishing: Paris, doi:10.1787/cb6d9eca-en.

Phillip E Gill, Walter Murray and Margaret H Wright, Practical Optimization, Academic Press: London, 1981.

White House Office of Science and Technology Policy (OSTP), Blueprint for an AI Bill of Rights: Making Automated Systems Work for the American People, 2022, <https://bidenwhitehouse.archives.gov/ostp/ai-bill-of-rights/>.

9.0 History and Authorship

Version	Change Description	Author(s)	Date
1.0	Inaugural version	Alex Foard, Jiahao Chen and Renata Gerecke, Strategic Initiatives Division	03/04/2024
2.0	Principles have been updated to integrate detail on labor and environmental concerns. Definitions have been expanded to integrate the broader set of AI-related definitions the city has outlined since the initial publication. An Index has been added to aid document navigation.	Alex Foard, Jiahao Chen, Renata Gerecke, A. Kathryn Hohman, Dean Labowitz, Soyoung Claire Park Strategic Initiatives Division	12/30/2025

10.0 Index

AI, **5**
 Algorithm, **6, 10, 11, 15**
 Algorithmic Tool, **6**
 Artificial Intelligence, **5, 6, 8, 9, 10, 11, 12, 13, 14, 15**
 Artificial Intelligence Governance, **5**
 As-a-Feature, **8**
 As-a-Service, **8**
 Audio, **7, 8**
 Automation, **6**
 Autonomy, **9, 11, 12, 15**
 Biological Sample, **9**
 Build Time, **9, 10, 13, 14, 15**
 City Entity, **9, 12**
 Classification, **9, 10, 12, 13, 14**
 Cloud Server, **10**
 Clustering, **10, 11, 12, 13**
 Collection, **7, 8, 10, 12, 13, 14**
 Computation, **9, 10, 11, 12, 13, 14**
 Computer Vision, **6**
 Data Management, **10**
 Data Owner, **10, 14, 15**
 Data Transformation, **10**
 Data Type, **7, 8, 9, 10, 11, 12, 13, 14**
 Developer, **10, 14**
 Distribution, **8, 9, 11, 14**
 Edge Device, **11**
 Facet, **11**
 Faceted Typology, **11**
 Forecasting, **11**
 Fully Autonomous, **11, 14**
 Function, **6, 9, 10, 11, 12, 13, 14**

Generative Artificial Intelligence, **6**
 Geographic Space, **11**
 Group, **11**
 Hierarchical Clustering, **11**
 Identifying Information, **6**
 Image, **7, 8**
 Individual, **11**
 Inference Algorithm, **10, 11**
 Information Presentation, **12**
 Informative, **12**
 Infrastructure, **11, 12, 13, 14**
 Machine Learning, **6, 9, 10, 14**
 Match, **7**
 Matching, **12, 13**
 Materially Impact, **6**
 Monitored, **12**
 Natural Language Processing, **7**
 Nominal Classification, **9, 10, 12**
 Nominal Clustering, **12**
 Nominal Data Type, **7, 9, 10, 12**
 Non-City Entity, **9, 12**
 Numerical Data Type, **7, 14**
 On-Premise Server, **12**
 Operator, **9, 11, 12, 14, 15**
 Optimization, **7, 12**
 Ordinal Classification, **9, 10, 13**
 Ordinal Clustering, **13**
 Ordinal Data Type, **8, 9, 10, 13**
 Other (Infrastructure), **13**
 Other (Subject), **13**
 Owner, **10, 12, 13**
 Pair, **7, 8**
 Performance Evaluation, **13**
 Personal Computing Device, **13**
 Predictive Model, **7**
 Property, **13**
 Purpose, **10, 12, 13, 14, 15**
 Ranking, **12, 13, 14**
 Resource Allocation, **14**
 Robotic Process Automation, **7**
 Sampling, **13, 14**
 Scoring, **9, 14**
 Sequence, **7, 8, 11, 13**
 Server, **10, 12, 14**
 Servicer, **14, 15**
 Stakeholder, **10, 13, 14, 15**
 Standalone, **14**
 Subject, **9, 10, 11, 13, 14**
 Supervised, **15**
 Tabular, **8**
 Text, **8**
 Time Series, **7, 8**
 Training Algorithm, **15**
 Tree, **8, 10, 11**
 Triage, **15**
 Tuple, **8**
 Type, **11, 15**
 Typology, **11, 15**
 Use Time, **9, 10, 11, 12, 13, 14, 15**
 Video, **8**

11.0 Notes

¹ White House Office of Science and Technology Policy (OSTP), Blueprint for an AI Bill of Rights: Making Automated Systems Work for the American People, 2022, <https://bidenwhitehouse.archives.gov/ostp/ai-bill-of-rights/>.

² Agencies should consult with internal legal and labor relations teams to ensure they have a complete understanding of relevant law and policy and ensure compliance with each.

³ See varied resources available at <https://www.nyc.gov/content/climate/pages/planyc-getting-sustainability-done> including particularly: Mayor’s Office of Climate and Environmental Justice, “PlaNYC: Getting Sustainability Done,” 2023, available at: <https://www.nyc.gov/assets/climate/downloads/pdfs/PlaNYC-2023-Full-Report.pdf>

⁴ Administrative Code of the City of New York, §§ 23-1201 to 23-1205.

⁵ Administrative Code of the City of New York, § 23-1201.

⁶ Chief Privacy Officer of the City of New York, Citywide Privacy Protection Policies and Protocols, 2025, https://www.nyc.gov/assets/oti/downloads/pdf/reports/cpo/2025%20Citywide%20Privacy%20Protection%20Policies%20and%20Protocols_web.pdf.

⁷ *Id.*; Transparency; public trust; accountability; data minimization; use limitation; responsible governance and stewardship; data quality, integrity, and accuracy; security safeguards; and equity.

-
- ⁸ See page 20 of the Agency Privacy Officer Toolkit for the PIA, https://www.nyc.gov/assets/oti/downloads/pdf/reports/cpo/2025%20Agency%20Privacy%20Officer%20Toolkit%20_web.pdf
- ⁹ Local Law 35 of 2022, Administrative Code of the City of New York, § 3-119.5, <https://legistar.council.nyc.gov/LegislationDetail.aspx?ID=4265421&GUID=FBA29B34-9266-4B52-B438-%20A772D81B1CB5>.
- ¹⁰ Adapted from 1) NIST Artificial Intelligence Risk Management Framework (“AI RMF”), NIST AI 100-1 v1.0, January 2023, doi: 10.6028/NIST.AI.100-1, pp. 20 ff., and 2) ISO/IEC39500:2024(en) – Information Technology – Governance of IT for the organization, 3.3 governance and 3.4 governance of IT, <https://www.iso.org/obp/ui#iso:std:iso-iec:38500:ed-3:v1:en:term:3.3>, and §3.4 [governance of IT](https://www.iso.org/obp/ui#iso:std:iso-iec:38500:ed-3:v1:en:term:3.4), <https://www.iso.org/obp/ui#iso:std:iso-iec:38500:ed-3:v1:en:term:3.4>.
- ¹¹ [Local Law 35 of 2022](https://legistar.council.nyc.gov/LegislationDetail.aspx?ID=4265421&GUID=FBA29B34-9266-4B52-B438-%20A772D81B1CB5), Administrative Code of the City of New York, § 3-119.5, <https://legistar.council.nyc.gov/LegislationDetail.aspx?ID=4265421&GUID=FBA29B34-9266-4B52-B438-%20A772D81B1CB5>
- ¹² National Artificial Intelligence Initiative Act of 2020, 15 U.S.C. ch. 119 § 9401(3), <https://uscode.house.gov/view.xhtml?path=/prelim@title15/chapter119&edition=prelim>
- ¹³ [IEEE Guide for Terms and Concepts in Intelligent Process Automation](https://ieeexplore.ieee.org/document/8070671), IEEE Std 2755-2017, Sept. 28, 2017, doi:10.1109/IEEESTD.2017.8070671, <https://ieeexplore.ieee.org/document/8070671>, <https://ieeexplore.ieee.org/document/8070671>
- ¹⁴ National Institute of Standards and Technology (NIST), [The Language of Trustworthy AI: An In-Depth Glossary of Terms](https://www.nist.gov/publications/language-trustworthy-ai-depth-glossary-terms), March 29, 2023, doi:10.6028/NIST.AI.100-3, <https://www.nist.gov/publications/language-trustworthy-ai-depth-glossary-terms>.
- ¹⁵ Benjamin C. Pierce, *Types and Programming Languages*, MIT Press: Cambridge, MA, 2002.
- ¹⁶ Helen Toner, [What Are Generative AI, Large Language Models, and Foundation Models?](https://cset.georgetown.edu/article/what-are-generative-ai-large-language-models-and-foundation-models/), Center for Security and Emerging Technology, May 12, 2023, <https://cset.georgetown.edu/article/what-are-generative-ai-large-language-models-and-foundation-models/>; archived at <https://web.archive.org/web/20250822172509/https://cset.georgetown.edu/article/what-are-generative-ai-large-language-models-and-foundation-models/>.
- ¹⁷ National Institute of Standards and Technology (NIST), [The Language of Trustworthy AI: An In-Depth Glossary of Terms](https://www.nist.gov/publications/language-trustworthy-ai-depth-glossary-terms), March 29, 2023, doi:10.6028/NIST.AI.100-3.
- ¹⁸ National Institute of Standards and Technology (NIST), [The Language of Trustworthy AI: An In-Depth Glossary of Terms](https://www.nist.gov/publications/language-trustworthy-ai-depth-glossary-terms), March 29, 2023, doi:10.6028/NIST.AI.100-3.
- ¹⁹ Phillip E Gill, Walter Murray and Margaret H Wright, *Practical Optimization*, Academic Press: London, 1981.
- ²⁰ Leo Breiman, *Statistical Modeling: The Two Cultures*, *Statistical Science* 16(3): 199-231, 2001, doi:10.1214/ss/1009213726, <https://projecteuclid.org/journals/statistical-science/volume-16/issue-3/Statistical-Modeling--The-Two-Cultures-with-comments-and-a/10.1214/ss/1009213726.full>.
- ²¹ National Institute of Standards and Technology (NIST), [The Language of Trustworthy AI: An In-Depth Glossary of Terms](https://www.nist.gov/publications/language-trustworthy-ai-depth-glossary-terms), March 29, 2023, doi:10.6028/NIST.AI.100-3.
- ²² Donald E. Knuth, *The Art of Computer Programming, Vol. 2: Seminumerical Algorithms*, Addison-Wesley: Reading, MA, 3rd ed., November 1997.
- ²³ Martín Abadi and Luca Cardelli, *A Theory of Objects*, Springer-Verlag: New York, 1996, doi:10.1007/978-1-4419-8598-9, <https://link.springer.com/book/10.1007/978-1-4419-8598-9>.
- ²⁴ Alan Agresti, *Analysis of Ordinal Categorical Data*, John Wiley & Sons: Hoboken, NJ, April 2010, doi:10.1002/9780470594001, <https://onlinelibrary.wiley.com/doi/book/10.1002/9780470594001>.
- ²⁵ *Ibid.*
- ²⁶ *Ibid.*
- ²⁷ Benjamin C. Pierce, *Types and Programming Languages*, MIT Press: Cambridge, MA, 2002.
- ²⁸ Donald E. Knuth, *The Art of Computer Programming, Vol. 2: Seminumerical Algorithms*, Addison-Wesley: Reading, MA, 3rd ed., November 1997.
- ²⁹ Benjamin C. Pierce, *Types and Programming Languages*, MIT Press: Cambridge, MA, 2002.

³⁰ Adapted from OECD Framework for the Classification of AI Systems, in OECD Digital Economy Papers No. 323, February 22, 2022, OECD Publishing: Paris, [doi:10.1787/cb6d9eca-en](https://doi.org/10.1787/cb6d9eca-en), p. 53 “Action autonomy level”.

³¹ Adapted from the terms “build phase” and “use phase” which occur in Explanatory memorandum on the updated OECD definition of an AI system, in OECD Artificial Intelligence Papers No. 8, March 2024, OECD Publishing: Paris, [doi:10.1787/623da898-en](https://doi.org/10.1787/623da898-en), Figure 1, p. 7. The original citation is to “model-building” and “model inference” in OECD Framework for the Classification of AI Systems, in OECD Digital Economy Papers No. 323, February 22, 2022, OECD Publishing: Paris, [doi:10.1787/cb6d9eca-en](https://doi.org/10.1787/cb6d9eca-en).

³² Adapted from ISO/IEC JTC 1/SC 32, Information technology — Metadata Registries Interoperability and Bindings (MDR-IB) — Part 1: Framework, common vocabulary, and common provisions for conformance, ISO/IEC 20944-1:2013(en), §3.6.6.2 data management, <https://www.iso.org/obp/ui#iso:std:iso-iec:20944:-1:ed-1:v1:en:term:3.6.6.2>.

³³ Adapted from D. J. Foskett, The Construction of a Faceted Classification for a Special Subject, in Proceedings of the International Conference on Scientific Information, National Academy of Sciences, 1959, pp. 867–888, [doi:10.17226/10866](https://doi.org/10.17226/10866).

³⁴ Adapted from OECD Framework for the Classification of AI Systems, in OECD Digital Economy Papers No. 323, February 22, 2022, OECD Publishing: Paris, [doi:10.1787/cb6d9eca-en](https://doi.org/10.1787/cb6d9eca-en), p. 53 “Action autonomy level”.

³⁵ Adapted from OECD Framework for the Classification of AI Systems, in OECD Digital Economy Papers No. 323, February 22, 2022, OECD Publishing: Paris, [doi:10.1787/cb6d9eca-en](https://doi.org/10.1787/cb6d9eca-en), p. 53 “Action autonomy level”.

³⁶ Adapted from OECD Framework for the Classification of AI Systems, in OECD Digital Economy Papers No. 323, February 22, 2022, OECD Publishing: Paris, [doi:10.1787/cb6d9eca-en](https://doi.org/10.1787/cb6d9eca-en), p. 53 “Action autonomy level”.

³⁷ Adapted from Technical Committee ISO/TC 176/SC 2, Quality management systems — Requirements, ISO 9001:2015(en), <https://www.iso.org/standard/62085.html>, §9 performance evaluation.

³⁸ Adapted from: OECD Framework for the Classification of AI Systems, in OECD Digital Economy Papers No. 323, February 22, 2022, OECD Publishing: Paris, [doi:10.1787/cb6d9eca-en](https://doi.org/10.1787/cb6d9eca-en), p. 53 “Action autonomy level”.

³⁹ Adapted from Technical Committee ISO/TC 46/SC 10, Information and documentation — Emergency preparedness and response, ISO 21110:2019(en), §3.17 triage, <https://www.iso.org/obp/ui#iso:std:iso:21110:ed-1:v1:en:term:3.17>; and Technical Committee ISO/TC 309, Whistleblowing management systems — Guidelines, ISO 37002:2021(en), §3.12 triage, <https://www.iso.org/obp/ui#iso:std:iso:37002:ed-1:v1:en:term:3.12>

⁴⁰ Some relevant references are P. Martin-Löf, Intuitionistic type theory, Bibliopolis: Napoli, 1984; M. Abadi and L. Cardelli, A theory of objects, Springer-Verlag: New York, 1996.

⁴¹ “Typology”, American Psychological Association (APA), APA Dictionary of Psychology, April 19, 2018, <https://dictionary.apa.org/typology>.