

Accelerated Underwriting Definitions

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Algorithm - means a clearly specified mathematical process for computation; a set of rules that, if followed, will give a prescribed result. (From the AI Bulletin)

Algorithm - A list of steps to finish a task. A set of instructions that can be performed with or without a computer. For example, the collection of steps to make a peanut butter and jelly sandwich is an algorithm. (From the NAIC Glossary for Regulators of InsurTech)

Artificial Intelligence (AI) - refers to a branch of computer science that uses data processing systems that perform functions normally associated with human intelligence, such as reasoning, learning, and self-improvement, or the capability of a device to perform functions that are normally associated with human intelligence such as reasoning, learning, and self-improvement. This definition considers machine learning to be a subset of artificial intelligence. (From the AI Bulletin)

Artificial Intelligence/Machine Learning Definition For purposes of this survey, AI is defined as models that can simulate learning in performing tasks. ML is a subset of algorithms that facilitate learning without being explicitly programmed to achieve a predetermined result. Models that are considered AI and built using ML include robotics, natural language processing, and sentiment analysis. AI/ML describes an automated process in which a system begins recognizing patterns without being specifically programmed to achieve a pre-determined result. This is different from a standard algorithm in that an algorithm is a process or set of rules executed to solve an equation or problem in a pre-determined fashion. Evolving algorithms are considered a subset of AI/ML.

For purposes of this survey, the following AI systems are excluded:

- Scorecards that deterministically map consumer or other risk characteristics to treatments or decisions.
- Tables of point or factor assignments in risk classes.
- Deterministic “phone trees” that navigate consumers through prerecorded voice prompts.

(From the Life Insurance AI/ML Survey Results Report)

Big data - refers to extremely large datasets analyzed computationally to infer laws (regressions, nonlinear relationships, and causal effects) to reveal relationships and dependencies or to perform predictions of outcomes and behaviors. (From CASTF’s Predictive Model White Paper)

Machine Learning (ML) - Refers to a field within artificial intelligence that focuses on the ability of computers to learn from provided data without being explicitly programmed. (From the AI Bulletin)

Machine Learning - Machine learning algorithms are a process or set of rules executed to solve an equation², e.g., a life insurance underwriter uses a set of rules to place an individual insured in a particular risk category. The 'learning' part of machine learning means that those programs change how they process data over time, much as humans change how they process data by learning. Machine learning often falls into two groups: supervised or unsupervised. The difference between the two is whether the program is directed to analyze patterns or is self-automated. (From the NAIC's Accelerated Underwriting in Life Insurance Educational Report)

Predictive model - refers to a set of models that use statistics to predict outcomes. When applied to insurance, the model is chosen to estimate the probability or expected value of an outcome given a set amount of input data; for example, models can predict the frequency of loss, the severity of loss, or the pure premium. (From CASTF's Predictive Model White Paper)

Predictive Model - refers to the mining of historic data using algorithms and/or machine learning to identify patterns and predict outcomes that can be used to make or support the making of decisions. (From the AI Bulletin)

Predictive Models - examine data sets for patterns to predict and assign the risk category, e.g., a model developer enters data points (potentially hundreds of thousands), and the model finds patterns and identifies future predictions of risk and assigns an insured to a risk category. (From the NAIC's Accelerated Underwriting in Life Insurance Educational Report)