

The Essential **AI GLOSSARY**

for Community College Enrollment Leaders





AI's significance in higher education is rooted in its unparalleled capabilities. It can analyze extensive datasets, automate routine tasks, and deliver personalized insights. All of this has the profound potential to enhance the efficiency and effectiveness of the processes embedded in colleges and universities. From automating repetitive administrative tasks to predicting student needs and behaviors, AI can help institutions like yours capture strategic advantages while anticipating and mitigating issues before they arise.

What is AI?

AI refers to computer systems that can perform tasks that historically required human intelligence, such as learning, reasoning, and problem solving. AI systems don't rely on explicit programming for specific tasks; instead, they learn from extensive data and experience. Utilizing methods such as **machine learning**, **deep learning**, and **natural language processing**, these systems can autonomously enhance their performance without the need for human intervention.

For higher education institutions, AI has tremendous potential to support critical functions like admissions, advising, tutoring, and student success.

How it Works

AI systems analyze massive amounts of student data to identify patterns and generate insights to guide decision makers. The algorithms used in AI learn continuously from data and experience, identifying patterns that inform personalized recommendations, refine educational strategies, and ultimately enhance the learning experience for students. For instance, a machine-learning algorithm processes extensive student **data input**, including demographics, academic records, and engagement data. Analyzing these datasets reveals relationships between student characteristics and outcomes like enrollment, academic performance, and graduation. Using these patterns, AI creates a predictive statistical model for future students.

Over time, the algorithm's **feedback loop** improves its precision in identifying students likely to enroll, succeed, or drop out, and provides tailored interventions for better outcomes. This autonomous learning hinges on the algorithm's capacity to self-optimize and update instructions, rather than relying on human programmers. This ability to learn from data and feedback empowers AI applications to grow in intelligence and capability, setting them apart from traditional static software.



Common Uses

AI solutions are becoming an increasingly integral component within higher education, and their adoption is reshaping how institutions operate, make decisions, and provide support to students. A study by IDC revealed that 92% of colleges and universities are using some form of AI technology on their campuses.*

These institutions use AI for a variety of purposes, ranging from streamlining administrative tasks to enhancing educational experiences. For instance:

- AI-powered chatbots are commonly used to handle routine inquiries from prospective students and offer immediate assistance.
- AI-driven **advanced analytics** play a pivotal role in decision making by illustrating enrollment trends and predicting outcomes.
- AI-generated insights help identify at-risk students to improve student retention.

Common Types

As the field of AI continues to grow, so do the types of AI commonly used in higher education. **Machine learning**, a subset of AI, is commonly used by colleges and universities. Machine-learning algorithms can analyze vast datasets to identify patterns, making them invaluable in predicting student outcomes and optimizing processes.

Additionally, **predictive analytics** and **prescriptive analytics**, which fall within the AI umbrella, empower institutions to improve enrollment strategies, anticipate student needs, tailor interventions, and ultimately improve student success rates. These types of AI are reshaping the future of higher education by harnessing the power of data to inform decisions and provide personalized support to students throughout their academic journeys.

Generative AI, another exciting development in the AI landscape, is also making its mark in higher education. Generative AI specializes in creating new content that can enhance educational materials, foster creativity in teaching and learning, and provide students with a more personalized learning experience.

* <https://www.uopeople.edu/blog/ai-in-education-where-is-it-now-and-what-is-the-future/>

AI Glossary

The terminology used in data analytics and AI is constantly evolving. This glossary provides clear definitions of common AI terms for easy reference.



Additional Prediction

A forecast that extends beyond the primary outcome to predict other relevant variables or results using the same or a related model.



Advanced Analytics

Advanced analytics involves using complex techniques and algorithms to analyze data and extract meaningful insights beyond traditional methods, enabling organizations to uncover hidden patterns, trends, and correlations.



Algorithms

AI algorithms are the instructions that guide the system's decision-making process. These can be rule-based, probabilistic, or machine-learning algorithms that adapt and improve with experience.



Artificial Intelligence

Artificial intelligence (AI) refers to the simulation of human intelligence processes by machines, enabling them to perform tasks that typically require human cognition, such as learning from experience, reasoning, and problem solving.



Cohort

A group of individuals or entities classified together in an analysis because they share one or more defining characteristics.



Current Prediction

The latest output from a predictive model, using the most recent data to forecast outcomes and which creates the best aggregate prediction of a population.



Data Input

AI systems rely on data as their primary source of information. They intake and process vast amounts of data, which can be structured (such as databases) or unstructured (like text and images).



Deep Learning

Deep learning is a machine-learning technique that trains computer models on large datasets to perform tasks like image recognition, natural language processing, and prediction.



Descriptive Impact

The effect or influence of variables that cannot be controlled or altered, but which may affect predictions.



Division

Refers to subgroups within a larger population, often categorized by specific characteristics like geographic location, campuses or programs. Used in data analysis to enhance precision within the software application.



Feedback Loop

The process of continually refining the performance of AI systems over time by adjusting their algorithms and responses based on the outcomes and feedback they receive.



Generative AI

A type of artificial intelligence that can generate new content such as images, text, audio, and video from scratch rather than simply analyzing existing data.



Historical Prediction

Naive aggregate prediction of a population based upon training data averages.



Likelihood Score

A probability calculated by a model that estimates the chance of a particular outcome.



Model (Data Science)

A representation of individual record behavior.



Model (Simulation)

A model that uses assumptions and scenarios to mimic and explore the behavior of complex systems within a virtual environment.



Natural Language Processing (NLP)

NLP is a computer program's ability to understand, interpret, and manipulate human language, allowing for tasks like translation and speech recognition.



Predictive Analytics

Predictive analytics uses historical data and statistical algorithms to forecast future outcomes or trends, helping organizations make informed decisions by identifying potential patterns and estimating the likelihood of specific events.



Prediction

The output of a model that forecasts future events or outcomes based on data and analytical techniques.



Prescriptive Analytics

Prescriptive analytics goes beyond predicting future outcomes by recommending actions to optimize decisions. It combines data analysis, machine learning, and business rules to provide actionable insights and guide organizations in making the best possible choices.



Prescriptive Impact

The potential change in outcomes driven by modifying variables that can be controlled in order to achieve desired results.



Simulation

The process of modeling a real-world situation in a controlled environment to predict behaviors under various scenarios.



Software Application

A program, such as Liaison Othot, that allows users to perform specific tasks with data and algorithms when utilizing AI and data analytics tools.



Software Feature

A specific functionality or tool within a software application that performs particular operations or tasks, such as data visualization or automated analysis.



Top Impacts

The most significant variables or factors in a predictive model that have the greatest influence on the outcome being predicted.



Variable

An attribute or piece of data used in models and analysis—such as age, income, or sales figures—that can vary or change.

To learn more about how to use AI responsibly and efficiently, [contact Liaison today](https://liaisonedu.com).



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