Introduction to Artificial Intelligence

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Overview: The field of Artificial Intelligence (AI) is a set of methods and approaches related to knowledge representation, automated reasoning, symbolic manipulation, and planning with the goal of algorithmically capturing various aspects of human intelligence. In contrast to machine learning, classical AI methods excel at explainability, logical reasoning, and safety critical applications. Moreover, classical AI combined with machine learning can lead to more robust systems by providing a logical *ground truth.* In this course, we will survey the field of AI, its principles, applications, and unsolved problems.

Topics will include: Agent based models, search, constraint satisfaction, formal logic, automated inference, knowledge representation, and planning.

Textbook: Stuart Russell & Peter Norvig, *Artificial Intelligence: A Modern Approach*

Prerequisites: Programming experience, especially in Python.

Designed for: Students interested in AI, machine learning, robotics, and agent based systems.