

Artificial Intelligence

Instructor Info —

0	Francois Rameau
\bigcirc	Office Hrs: Tues 16:00 - 18:00
0	B423
	032-626-1230
0	https://rameau-fr.github.io/
@	francois.rameau@sunykorea.ac.kr

Course Info –

- Prereq: None
 - Tues & Thurs
 - 14:90-15:20
 - B104

Overview

A comprehensive introduction to the problems of artificial intelligence and techniques for attacking them. Topics include problem representation, problem-solving methods, search, pattern recognition, natural language processing, learning, expert systems, and AI programming languages and techniques. Covers both theoretical methods and practical implementations.

Material

Required Texts

Artificial intelligence: a modern approach. Pearson by Stuart J. Russell, and Norvig Peter, 2016.

Other

Any required journal articles, online references, and book chapters will be provided in class.

Grading Scheme

25%	Homeworks
15%	Paper Presentation
25%	Mid-Terms
25%	Final Exam
10%	Attendance/Participation

Grades will follow the standard scale: A = 93-100; A = 90-92; B = 87-89; B = 83-86; B = 80-82; C + = 77-79; C = 73-76; C = 70-72; D = 67-69; D = 60-66; F = 0-59. Curving is at the discretion of the professor.

Learning Objectives

- Understand and apply fundamental concepts and techniques of artificial intelligence, including problem-solving methods, search algorithms, and pattern recognition.
- Develop practical skills in AI programming and implementation, with a focus on both traditional AI methods and advanced machine learning and deep learning techniques.
- Critically analyze and evaluate AI models and algorithms, demonstrating the ability to apply theoretical knowledge to real-world AI problems and projects.

Attendance

The attendance policy for SUNY Korea students specifies that attendance is mandatory for all classes, and unexcused absences will significantly impact the final grade. Students who exceed 20% of unexcused absences will receive a grade of "F".

Major topics

- Problem Representation and Problem-Solving Methods
- Pattern Recognition and Machine Learning
- Planning and Constraint Satisfaction Problems
- Probabilistic Reasoning
- Deep Learning
- Applications of Generative AI

FAQs

What is the difference between this AI class and a Machine Learning class?

- This AI class focuses on a broader range of AI topics, including search algorithms, logical reasoning, and planning, in addition to machine learning and deep learning..
- Are there any prerequisites for this course?
 - Yes, the prerequisites are MAT 371 or CSE 541, graduate standing, and a working knowledge of programming.
- What programming languages will be used in this course?
 - The course will primarily use Python for assignments and projects.

Academic integrity

Students are encouraged to collaborate and discuss their homework with classmates. However, all work must be original, and any violation of academic integrity, such as plagiarism or cheating, will not be tolerated and will be reported to the appropriate university authorities. Note that the codes and reports you will submit will be carefully checked for plagiarism.

For more information on academic integrity, please visit this link: http://www.stonybrook.edu/commcms/academic_integrity/index.html.

Students with disability

If you have a physical, psychological, medical, or learning disability, please contact the Department of Student Affairs. They will determine with you what accommodations if any, are necessary and appropriate. All information and documentation of disability is confidential

Critical incident management

The University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn.

Class Schedule

Period	Topics
1 Week	Introduction to AI and Intelligent Agents
2 Week	Problem Solving and Uninformed Search
3 Week	Informed (Heuristic) Search
4 Week	Local Search
5 Week	Nondeterministic and Partially Observable Problems
6 Week	Minimax/Alpha-Beta Pruning
7 Week	Constraint Satisfaction Problems
8 Week	Logical Agents and Classical Planning
9 Week	Midterm Exam
10 Week	Knowledge Representation and Reasoning
11 Week	Probabilistic Reasoning
12 Week	Learning from Examples
13 Week	Deep Learning: MLPs
14 Week	Deep Learning: CNNs, ViTs
15 Week	Applications of Generative AI