

Machine Learning for Architects

ARC 6XXX:

Class Periods: Thursdays, periods 3-5

Location: TBD

Academic Term: Fall 2024

Instructor:

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Office Hours: TBD

Teaching Assistants:

Mobina Noorani

Course Description

Students will focus on **experimentation** and **application**. Students will **apply** the most common state-of-the-art AI and Machine Learning (ML) algorithms and game engines in architectural design. **Emphasizing** AI as a paradigm for critical thinking and idea development, not just optimization. This course will fulfill university requirements to be categorized as **"Use & Apply AI"**.

Course Pre-Requisites / Co-Requisites

Applicants must have obtained a bachelor's degree or better and a minimum upper-division GPA of 3.0 from a regionally accredited institution.

Course Objectives

1. Remembering:
 - Recall the fundamental principles of AI and machine learning algorithms.
2. Understanding:
 - Explain the theoretical foundations behind AI and machine learning algorithms.
 - Interpret how AI and ML algorithms are utilized in architectural exercises.
 - Summarize the significance of AI and ML in architectural innovation.
3. Applying:
 - Implement common AI and ML algorithms to address architectural challenges.
4. Analyzing:
 - Evaluate the effectiveness of different AI and ML algorithms in architectural applications.
5. Evaluating:
 - Assess the performance of AI and ML models in addressing architectural requirements.
6. Creating:
 - Generate innovative architectural designs using AI, ML algorithms, and game engines.

Materials and Supply Fees

None

Required Textbooks and Software

- Rhino
- Grasshopper