Students will apply their understanding of Computer Vision to develop a software that focuses on real-world AI systems.

Project Deliverables

- Research Report
- Presentation
- Software code

Project Scope

Students will select a real-world AI system that makes use of computer vision. Examples include, but are not limited, to: cancer detection in healthcare, facial recognition for home security, obstacle detection for autonomous vehicles, etc.

Deadline

- Project Proposal: Jan. 29
- Progress Report: Feb. 19
- Final Project: Mar. 26 (may be subject to change)

Proposal components

- A one page summary that includes the following information:
    - Problem statement
    - Description of the proposed computer vision system. What is its significance in society?
    - How will you implement this system? Describe the techniques that you will use.
    - How will you present this system to the class?

Progress report

- A one to two-page summary that includes the following information:
    - Purpose: A brief statement explaining the problem that your project is trying to solve.
    - What work have you completed so far? Information you can include are as follows. You can also include other information if you wish.
        - Milestones that have been accomplished
        - Key activities performed
        - Results produced
    - What work is in progress?
        - Tasks currently underway
    - What obstacles (if any) have you encountered?
    - How much work is left.
    - A concluding paragraph that summarizes key points

Project components

- Research report: should follow this structure:
    - Introduction
        - Describe the significance of the chosen AI system in society
    - Problem Definition
        - What is the main problem that the AI system is trying to solve?
    - Methodology
        - What techniques (in relation to computer vision) does this AI system use?
    - Results and analysis
        - Explain the output of your implemented AI system and provide figures to back up your explanation
    - Conclusion
        - Prepare a conclusion that summarizes key findings
- Presentation: should follow this structure (10-12 slides; 7-10 minutes):
    - Introduction to the implemented AI system
    - Problem definition
    - Methodology
    - Results and analysis
    - Conclusion
- Software code:
    - An implementation of your selected AI system. Should demonstrate the techniques on computer vision that we will cover throughout the semester
    - You will do the implementation in Python

Assessment criteria:

- Project proposal: 5%
- Progress report: 5%
- Report: 35%
- Presentation: 20%
- Software: 35%