COSC423/523: Applied AI Project   Overview • Milestones

Overview

This project is required for all students enrolled in COSC 523. It is optional for students enrolled in COSC 423. This project requires that you:

- Pick an application domain that interests you.
- Identify a problem in that application domain.
- Choose a project pathway.
    - **Pathway #1: AI as a Tool**: Introducing and evaluating a modification to an existing algorithm (e.g., A*), e.g. [Path Planning with Modified a Star Algorithm for a Mobile Robot](https://www.sciencedirect.com/science/article/pii/S187770581403149X) (https://www.sciencedirect.com/science/article/pii/S187770581403149X). Projects in this pathway should:
        1. Introduce and describe a new technique.
        2. Implement the technique.
        3. Design an evaluation with empirical or simulated data.
        4. Compare the technique's performance with one existing technique.
    - **Pathway #2: AI as an Application**: Building machine learning models for a particular domain setting and evaluating them appropriately, e.g. [predicting /r/AITA votes with data from Reddit](/pubs/icwsm2021-AITA.pdf) (/pubs/icwsm2021-AITA.pdf). Projects in this pathway should:

1. Find or collect a dataset for machine learning use.
2. Implement and train models with the dataset, i.e. with scikit-learn or Keras.
3. Design an evaluation that compares the performance of multiple models.

- **Pathway #3: AI as an Interface**: Implementing interfaces that act "intelligently" and facilitate recommendations and/or search, e.g. [Microsoft's LookOut system](https://dl.acm.org/doi/abs/10.1145/302979.303030) (https://dl.acm.org/doi/abs/10.1145/302979.303030). Projects in this pathway should:

    1. Describe a scenario for integrating intelligence (e.g., recommendations) into an interface.
    2. Implement an interface prototype that demonstrates the concept.
    3. Conduct an informal user study with the prototype aimed at understanding how the new interfaces changes the nature of the application area.

- Prepare a proposal. Cite, at least, 5 or 6 research papers to motivate your project.
- Conduct an appropriate evaluation for your pathway.
- Write a final report about your project, its implementation, and your findings.
- Undergraduate students can form terms of up to 3 people, but graduate students may form teams of two

Goal	Description	Value	Due Date
Milestone 1: Proposal	Project Proposal.	5%	Oct 26
Milestone 2: Report	Design your dataset.	15%	Nov 30

Milestones

Below, you can cycle through the various Milestone tabs to see their requirements.

M1. Proposal

M2. Report

The objective of the Milestone 2 (M2) is submitting a final report based on your project, its implementation, and any findings related to your project. Your docment should be written with the AAAI 2020 Author Kit

(https://www.aaai.org/Publications/Templates/AuthorKit20.zip). It is advisable that your team write in LaTeX. The easiest way to collaborate on LaTeX documents is through Overleaf (https://www.overleaf.com).

I. Milestone Requirements

The requirements of this milestone are as follows:

1. **Final Report:** Your team must submit a document in the AAAI format, by the due date, that includes the following:
   - Your document should include six sections:
     - Introduction: Describe why your project matters.
     - Approach: Describe your approach.
     - Implementation: Describe your approach.
     - Evaluation: Describe your evaluation.
     - Future Work: Describe what could follow your work.
     - Contributions: Describe the contributions of each team member.
   - The document should be, at most, 8 pages in length.

Note: Your report must be submitted by 11:59pm on November 30 via Canvas. Note that it is perfectly permissible to re-use text from prior Milestone submissions for this final report. You should aim to submit a report that is well-written and clearly articulates all aspects of your team's work.

You may also be interested in several resources, such as:

- ShareLaTeX's Table Generator (https://www.tablesgenerator.com)
- Overleaf's LaTeX Tools (https://www.overleaf.com/learn/latex/LaTeX_tools) list

II. Grading

This milestone is worth 20% of your final project grade. The 20% is calculated like so:

Deliverable	Description	Value
Proposal	A written proposal exists with all required information.	2.5%
	Proposal is grammatically and structurally well-written.	2.5%
Final Report	Report articulates all aspects of project effectively.	12.5%
	Report is grammatically and structurally well-written.	2.5%