Spring 2023
Introduction to Artificial Intelligence

Final Project Specification

Introduction

We are approaching the end of this semester. We hope that you have made good progress on your final project. As you may recall, you are expected to submit **a 15-min video recorded presentation**, and **GitHub repository**.

Video Recorded Presentation

Ready for preparing your 15-min video recorded presentation? Please read the following instruction carefully. The following items are expected to be covered in your presentation. We will grade your score based on these sections. A **Final Project** channel has been created on Microsoft Teams. If you have any questions, please feel free to let us know!

- **Introduction** - Brief overview of your problem. Why this problem is important? Why we spend time working on this?
- **Related work** - Describe papers/works that are relevant to your final project. Please also explain the difference between your work and the existing ones.
- **Dataset/Platform** - Explain the dataset/platform you used for your final project. For instance, the size of the dataset, distribution of classes, or how your implement platform for Game AI.
- **Baseline** - Explain how you implement baselines. For example, you are working on an object recognition problem. You may choose Convolutional Neural Network (CNN) as your baselines. Your main approach may be a Transformer. Please give a brief description of the baselines in the video.
- **Main Approach** - Please propose a main approach. You should describe the algorithm in detail. Specifically, please discuss how they apply to your problem (what are the inputs/outputs, variables, factors, states, etc.)?
- **Evaluation Metric** - Please include metrics, both qualitative and quantitative, you are using to evaluate the performance of your baselines and proposed method. Note that please explain your metrics in detail.
- **Results & Analysis** - Please present the performance of your baselines as well as main approach. Additionally, please analyze the results you obtained. For example, you are working on an object recognition problem, and there are

10 different classes. Most of the classes achieve reasonable results using CNN. However, one of the classes performs unsatisfactory compared to others. Why?

Submission

1. **The deadline for recorded video and report is 6/6 (Tue) 23:59:00.**
2. Record one 15-min video and upload to youtube, then submit the **link** and **your presentation slide** to E3
3. As this is the final project, we **DO NOT accept any late submissions**.
4. **Only one team member needs to submit the recorded presentation and slide.**
5. We will select **5 groups** for a live presentation on **6/13 (tentatively)**. We note that those selected groups **should** present your work (not optional this time). Those selected groups will have additional scores and perhaps some bonus awards (e.g., best poster, best presentation, and best-voted poster/presentation). Please be well-prepared as you might be one of the outstanding teams.

Scoring Criteria

Hard constraint: ng case at most 60 points, plagiarize from 2022/2021 0 point

1. Originality (15 %)

15%	Surprising application or analysis aspect
10%	Utilize different dataset or model/method
0%	Only reproduce reference

2. Difficulty (10%):

10%	Topics from NeurIPS benchmark/dataset or other challenging topics
7%	other cases
0%	CNN classification for xx / RL for small game

3. Clarity & Organization(20%)

   Richness and clarity of expression

   - Introduction
   - related work
   - dataset / baseline
   - proposed method
   - contribution of each member

4. Completeness (55%)

   Including：

   a. Introduction (5)
   b. Related work (5)
   c. Dataset/Platform (5)
   d. Baseline (5)
   e. Main Approach (15)
      - Only use pre-built model from package (scikit-learn, PyTorch …etc)：at most 5 points
      - Do not explain the detail of your approach: minus 5 points
   f. Evaluation metric (5)
   g. Results & analysis & Others (15)
      - Type of experiment (5)：If there is only one type,e.g.,change the learning rate, then you'll get at most 2 points.
      - Discussion and analysis (5)：Only numerical values without discussion and analysis will receive a maximum of 2 points.
      - Limitation of your work (2)
      - Try to apply the model/method to practical use. (3)

Example

Final Project example

1. Originality (15 %)

15%	
10%	V
0%	

2. Difficulty (10%):

10%	
7%	
0%	V (CNN for xx classification)

3. Clarity & Organization(20%) **base on your video presentation**

   Richness and clarity of expression

   - Introduction
   - related work
   - dataset / baseline
   - proposed method

4. Completeness (55%)

   Including：

   a. Introduction (5) **5 points**

   b. Related work (5) **5 points**

   c. Dataset/Platform (5) **5 points**

   d. Baseline (5) **5 points**

   e. Main Approach (15) **8 points**

   - Only use pre-built model from package (scikit-learn, PyTorch …etc)：at most 7 points
   - Do not explain the detail of your approach: minus 5 points

   f. Evaluation metric (5) **5 points**

g. **Results & analysis & Others (15)** **12 points**

- Type of experiment (5)：If there is only one type,e.g.,change the learning rate, then you'll get at most 2 points. **5 points**
- Discussion and analysis (5)：Only numerical values without discussion and analysis will receive a maximum of 2 points. **5 points**
- Limitation of your work (2) **2 points**
- Try to apply the model/method to practical use. (3) **0 point**

Completed analysis but with easy task and naive method won't get too much points in total.