ECE 9309B Machine Learning: From Theory to Applications
Final Project Information

January 21, 2019

The aim of this course project is to prepare you to apply the state-of-art machine/deep learning techniques to solve real-world problems. In this project, groups are expected to select a project topic, implement/analysis and optimize machine/deep learning models on a dataset to investigate an engineering problem, and finally submitting a final report along with the software codes.

Project Arrangements

- The course project worth 60% of the total final grade.
- The project should be conducted in groups. Groups of **three students** are responsible for working equally and making sure that each member contributes equally to the project.
- The instructor/TA may interview the group members individually, and accordingly, members may not receive the same grade.
- The project has three deliverables:
  - Selecting a topic and submit a project proposal. Due date: Feb. 8, 2019, 05:00:00 PM.
  - Progress report (5%). Due date: March. 21, 2019, 05:00:00 PM.
  - Group presentation (25%). The presentations will be held in the first two weeks of April.
  - Final project report and code submission (70%). Due date: April 15, 2019.

Part I - Selecting a Project

Your first task is to select a project from Kaggle completion/dataset that tackles an engineering problem. Please note that groups are **not** allowed to select datasets that are used in tutorials and learning purposed. In fact, datasets should be chosen from active/on-going competitions that address an engineering problem. Once the topic is selected, groups should submit a one-page project proposed describing the main idea, datasets, project milestones,

and the expected results to the course instructor/TA for approval and feedback. Please visit the link Kaggle datasets in the link below:

https://www.kaggle.com/datasets

Part II - Progress Report

The progress report will help you to make sure your progress is on track. In this report, you should describe what you have achieved so far. Also, you have to write briefly what are the next steps. This report can be used as the first draft of your final project. Note: we expect that the progress report and the final report to be on the same topic.

Part III - Group Presentation

Each group should prepare a 15 min. presentation of their work including the description of the project, methodology, implementation, and finally the showing results and the main remarks. At the of each presentation, there will be a round of questions from the course instructor/TA and your colleagues.

Part VI - Final Project Report and Code Submission

Groups should submit a final project report of a **maximum 8-page double column** in an IEEE Transaction format. You can find the templates for MS Word/LaTeX markups in the link below:

https://bit.ly/2CA8OGh

Attached the to report, please add an appendix that describes what each group member worked on and contributed to the project. Also, a link to a Bitbucket repository with the code for your final project is required. Please have a look at Bitbucket website:

https://bitbucket.org/product/pricing

Project Evaluation

Each deliverable of your project will be evaluated based on several factors:

- The extensiveness of the study and experiments. A project that produces a more intelligent system by combining several ML techniques together, or a project that involves well-designed experiments and thorough analysis of the experimental results, or a project that nicely incorporates various real-world applications, are scored higher.
- The writing style and the clarity of the written paper & code.