**Project Description** **Deep Learning Spring 2025**
**Dr. Ghoraani**

**Project Overview:** In this project, you will work collaboratively in teams to explore and implement recent advancements in the field of deep learning. Through hands-on experience, you will select a journal research paper related to deep learning within the past 5 years, analyze its methodologies, replicate implementations, propose enhancements, and present your findings to your peers.

**Project Guidelines:**

**1. Team Formation:**

- You need to create teams of 2-3 members on Canvas by **January 26**.

**2. Research Paper Selection:**

- Each team selects a journal (Not a conference paper) research paper related to deep learning from the past 5 years (2020 or after).
- The selected papers should focus on significant advancements and contribute to the field's progress.
- The paper must be cited at least 20 times.

**3. Project Proposal Submission:** By **February 9**, submit a one-page project proposal that encompasses the following details:

  - List of team members.
  - Title and citation of the selected research paper.
  - Number of times the paper has been cited (as of the proposal submission date).
  - A table outlining the tasks, timeline, and the name of the designated person in charge of the task.

| Tasks | Start Time | End Time | Person in charge |
|---|---|---|---|
| List the tasks in this column | | | |
| | | | |
| | | | |

  - See any additional instructions are on Canvas when you clink on Project Proposal.

**4. Final Project Components$^{+}$:** By **April 27** submit the followings:

- [.pdf file] A one-page report including a bullet list of the tasks performed (data, analysis, implementation, enhancement) and a list of each team member's contribution.

| Contribution | Name of the contributor |
|---|---|
| Briefly explain the contribution | |
| | |
| | |

- [.pdf file] A comprehensive scientific paper using Overleaf, ready for submission to a journal.
    - The paper discusses your project, including motivation, existing approaches, scientific gaps, methodology, results, discussions on findings, and proposed enhancements.
    - Mention the target venue for paper submission.
    - Ensure the paper conforms to the specified journal's formatting requirements.
- [Python codes and data] All related files for implementation, including commented Python codes and datasets used as required.
- [.pdf file] A PowerPoint presentation with voice-over that collectively showcases your team's work.
- See any additional instructions is on Canvas when you clink on Final Project Report.

**Project Timeline:**

- **Team Formation:** January 26
- **Research Paper Selection:** February 9
- **Project Proposal Submission:** February 9
- **Final Project Submission:** April 27

**Assessment and Evaluation:**

- **Project Proposal (10%):** Clear presentation of team members, paper citation, motivation, and well-structured plan.
- **Implementation (30%):** Successful implementation and understanding of methodologies presented in the chosen paper.
- **Scientific Paper (30%):** Quality of the written scientific paper, relevance, and targeted submission venue.
- **Presentation (20%):** Effective and engaging presentation of project findings, methodologies, and results.
- **Collaboration (10%):** Effective teamwork, communication, and adherence to deadlines.

**Resources:**

https://scholar.google.com/
https://github.com/
https://www.kaggle.com/
https://www.overleaf.com/

**Note:** This project encourages collaboration, in-depth exploration of recent deep learning research, and practical application. It provides a platform for students to enhance their research skills, technical implementation abilities, and presentation capabilities.