Advanced Topics in Deep Learning (COMS W6998 004): Final Project Guidelines

Final Report Due: May 5th, 2025 (by 11:59 PM)
Video Presentation Due: May 5th, 2025 (by 11:59 PM)
Code Submission Due: May 5th, 2025 (by 11:59 PM)

Overview:

As we near the end of the semester, I hope you're seeing promising results from your projects and have begun thinking about your final report and submission. This document outlines the detailed instructions and expectations for your final project submission, which includes the following three components:

1. Final Project Report
2. Code Submission
3. Video Presentation Submission

Each student must submit all three components individually on CourseWorks, regardless of whether they are working in a group or not.

(1) Final Project Report:

Your final report **should be written in the style** of the research papers you have been reading throughout the semester. This means following the tone, structure, and level of detail expected in academic writing within the machine learning and deep learning research community. Clear, concise writing and a logical flow of ideas are essential. While figures, tables, and diagrams are not required, they are strongly encouraged to help communicate your results effectively.

Length: Aim for **6–8 pages** (excluding references). However, you're welcome to go beyond this limit if necessary. You may include additional materials in the appendix or as supplementary documents if they help support your work.

Recommended Sections:

- **Title**
- **Abstract** (A brief summary of your paper, clearly describing the objectives and key results.)
- **Introduction** (Introduce the problem and its relevance, and structure of the paper ahead)
- **Related Work / Background** (Discuss relevant literature and prior research that motivates your work.)
- **Methods** (Describe your model architecture, training methods, and any loss functions used. Include a subsection on the dataset, how it was obtained, and preprocessing steps.)

- **Results** (Present your findings. Comparative tables showing performance metrics (e.g., accuracy, F1-score) under different hyperparameters or against baseline models are encouraged.)
- **Conclusion** (Discuss the strengths and limitations of your approach, and suggest directions for future work.)
- **Contribution** (If you worked in a team, clearly outline the **INDIVIDUAL CONTRIBUTION** of each member to the project. Solo projects may omit this section.)
- **References**
- **Appendix / Supplementary Material** (optional section)

You are free to use any academic paper format you prefer. We do not enforce a strict template, your report includes all required sections and adheres to the conventions of the papers studied in class. One suggested option is to use the **NeurIPS 2024 LaTeX template**, available here: NeurIPS 2024 Template, though you are not required to use this specific format.

IMPORTANT: If you reference or build upon existing work, you **must** provide proper citations. Attribution is critical in academic writing.

Submission Guidelines: The report should be in PDF format submitted via CourseWorks by the deadline.

(2) Code Submission:

Create a folder that contains all the relevant code and models used in your project. Ensure your code is well-organized and clearly commented. For team projects, indicate which parts of the code were implemented by which team members. Be sure to include a clear and thorough **README** file that:

- Explains how to run your code
- Describes the directory structure and key files
- Lists any dependencies or setup instructions

The README file can be either .MD, .pdf or .docx format. You may use code from external sources, such as GitHub, but must provide proper attribution in both the code and the README.

Submission Guidelines: Zip the code folder and name it using your UNI: **{UNI}_code.zip** . Submit this .zip file via CourseWorks by the deadline.

Note:

- If you are working on a lab-affiliated project and cannot share the complete code, contact the TAs. Share as much relevant code as possible.
- If your dataset is too large to upload, include a small subset for review. You do not need to submit the entire dataset.

(3) Video Presentation Submission:

Please prepare a short recorded presentation accompanied by a slide deck or PowerPoint. You may choose whether or not to have your camera on during the recording—either option is acceptable. The presentation should cover key aspects of your project. Suggested topics include the problem statement, the motivation and objectives behind the work, the dataset used and any preprocessing steps taken, the model architecture and design choices, the results and evaluation metrics, as well as any limitations and potential future directions. Each student is allocated **THREE MINUTES** for their portion of the presentation. For team projects, the total presentation time should be calculated as **(3 MINS)*(#Team members)**. Please note that timing will be strictly enforced, so ensure your presentation stays within the allotted duration. For team presentations, each member is required to present, and presentation time should be divided equally among all team members.

Submission Guidelines: Upload the video to **Google Drive** or **YouTube.** Then submit only the video link on CourseWorks by the deadline. Uploading the video might be time intensive, so please allow yourselves/your group enough time for processing and uploading the video to avoid late submissions.

Note for In-Class Presenters: If your group is presenting during class, you may record the live presentation and submit that video instead.