
General information

Course Logistics

- **Instructor:**
Simon S. Du (<https://simonshaoleidu.com/>)
- **Teaching Assistant:**
Prashant Rangarajan (<mailto:prashr@cs.washington.edu>), Yuhao Wan (<mailto:yuhaowan@cs.washington.edu>)
- **Lecture time and place:** Tuesday, Thursday 9:00 -- 10:20AM, CSE2 G10
- **Office Hours:**
Simon S. Du: Tuesday 10:30 -- 11:30 AM in person (Gates 312) and Zoom
Prashant Rangarajan: Wednesday 11:00 - 12:00 AM on Zoom
Yuhao Wan: Monday 10:00 - 11:00 AM on Zoom
Zoom links are on Canvas
- **Piazza (link (<https://piazza.com/washington/spring2022/cse543/home>))**

About the Course, Prerequisites and Grading

Deep learning is a broad class of machine learning methods based on neural networks, has become the central paradigm of machine learning. This course aims to introduce recent and exciting developments in deep learning. The focus is on the algorithmic and theoretical aspects of deep learning.

Prerequisites: This is an advanced graduate course, designed for Ph.D. level students, and will assume a substantial degree of mathematical maturity. Students entering the class should be comfortable with programming and should have a working knowledge of linear algebra (MATH 308), vector calculus (MATH 126), probability and statistics (CSE 312/STAT390), algorithms, and machine learning (CSE 446/546).

Grading: Your grade will be based on 2 homework assignments: HW1 (20%), HW2 (20%), a project proposal (5%), a project presentation (20%), and a final project report (35%)

Homework

- There are two homework, which will be released on Canvas.
- You have **two late days**.
- Homework must be typed. You can use any typesetting software you wish (latex, markdown, ms word, etc).
- You may discuss assignments with others, but you must write down the solutions by yourself.
- We follow the standard UW CSE policy (<https://www.cs.washington.edu/academics/misconduct>) for academic integrity.
- **Tentative timeline:**
 - First homework release: April 8th. First homework due: April 22nd.
 - Second homework release: April 22nd. Second homework due: May 6th.

Course project

Projects should be done in groups of 1-2, with the intention of exploring one direction in greater detail. If you cannot find team members for a group, send an email to the instructor. The projects can be either a literature review or original research. For literature review, you do not need to reimplement algorithms. We list ideas for a few project topics on Canvas. It is okay to do projects on topic not listed.

- **Timeline:**
 - Proposal (due date: April 8th): submit a short report (1 - 1.5 pages) stating the papers you plan to survey or the research problems that you plan to work on. Describe why they are interesting and provide a list of appropriate references. You are encouraged to connect this project with your current research.
 - Presentation (May 31st and June 2nd): details on Canvas.
 - Final report (due date: June 10th): You are expected to submit a written project report (~8pages) describing your findings.

- **Format:** You must use the NeurIPS Latex format. (<https://neurips.cc/Conferences/2020/PaperInformation/StyleFiles>)
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