

## **CS 798 Spring 2025**

1. My office hours: Monday 3-4 in DC2643
2. Tentative Class Plan (i.e. general organization by module/chapter/etc.)

We will go over recent papers on theory of various contemporary machine learning topic. These may include:

Generalization guarantees for over-parameterized models,  
Alternatives to worst-case analysis  
Generative AI models,  
Fairness,  
Interpretability

For each paper, there will be an introduction presenting background concepts By the instructor, a presentation of the paper by a student, and finally a class discussion.

3. Required materials: There will be a list of research papers to read. They are all freely available.
4. How late/missed content will be handled: Penalty of 10% of the assignment mark for each of the first 3 days after the deadline

Submission later than that should be preapproved by the instructor

5. There will be no automated screening;

### **Optional for inclusion:**

1. Assessments and activities (i.e. marking scheme): Marks will be based on  
Evaluation of paper presentation - 60%

Participation in class discussions - 10%

Final project or exam - 30%

1. Readings list Will be posted later
2. Course description:

The course will aim to survey theoretical underpinnings of contemporary machine learning issues.

The course will consist of introduction to the different topics by the instructor followed by student presented research papers that will include extensive in class discussions.

***The course will require background in basic machine learning theory (as taught in CS 485 or CS 480).***

***The first course meeting will include a short squeeze on basic ML theory concepts. Success in this squeeze is a prerequisite to participation in the course.***