

# PRINCIPLES OF AI: LLMs (STAT 9911)

Department of Statistics & Data Science, The Wharton School, University of Pennsylvania,  
Spring 2025

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**Time:** Tue/Thu 15:30pm-16:59pm

**Place:** SHDH 109

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**Objectives:** This class aims to fulfill several roles: (1) introduce large language models going from the very basics to the frontiers in some areas, (2) discuss some the key recurring ideas and principles in their design and analysis, and (3) identify key limitations and research directions. We aim to introduce both some of the most influential works, as well as some of the latest and most exciting findings. We aim to balance the description of practical algorithms with insights arising from fundamental research.

## Course Pages:

1. Canvas for announcements and private materials: <https://canvas.upenn.edu/courses/1830181>
2. Public class page: <https://github.com/dobriban/Principles-of-AI-LLMs/>

**Prerequisites:** You are expected to have some basic familiarity with statistics and machine learning (e.g., at the level of STAT 4310 and CIS 520).

**Topics:** A list of possible topics are discussed on the Github page.

**Instructor:** Edgar Dobriban, [dobriban@wharton.upenn.edu](mailto:dobriban@wharton.upenn.edu), Office: 305 WARB. Office Hours: by appointment

**Feedback:** I am interested to hear about your experience and suggestions for the class.

**Grading Policy:** The course grade will be driven by two factors: presentation (80%), and class participation (20%). The components of each are

- Presentation: Clarity (ability of others to follow). Correctness. Coverage (did you cover the important parts?). Insight.

Think of the presentation as a course project. You will need to prepare the presentation (slides to be presented in class, or cca 6 pages of lecture notes) and provide it to the class 24 hours in advance. These will be posted on Canvas or Github. You may reuse presentation materials from other sources.

We are aiming that the first student presentations be in the second or third week. There will be a Google Sheet where you can sign up. I can guide with choosing topics, literature search, and structuring the presentation.

- Class participation: Attendance, asking questions.