MGT 8803: AI in Finance

Class Information

- Instructor: Sudheer Chava
- Office: Scheller College of Business or 16th floor CODA
- Email: chava@gatech.edu (best way of reaching me)
- Web site: http://fintech.gatech.edu
- Office Hours: by appointment
- Section: MGT 8803 / 4803 - SC
- Class Room: Room 103, Scheller College of Business
- Class timings: Tue/Thu 11:00-12:15pm

Artificial Intelligence, driven by the recent advances in Deep Learning and Large Language Models (LLMs) has started impacting trading, asset management industry, banking, insurance and all segments of the financial services industry. AI has a significant potential to transform every task and every aspect of the financial services industry. The class is the second of the two part series. This Fall class focused on various machine learning models that can be applied to finance use cases. This second class during Spring 2026 will focus on NLP LLMs and GenAI in Finance. It is not necessary to have taken the first class to take this class, but it would be helpful.

This class aims to give students an understanding of

1. Artificial Intelligence and the Future of Finance
2. ML and DL models for Finance
3. Natural Language Processing (NLP) in Finance
4. Large Language Models (LLMs) in Finance
5. Domain Specific LLMs in Finance and Small Language Models
6. Generative AI (GenAI) in Finance

This is **NOT** a class on the theoretical underpinnings of DL or LLMs. This course is not intended to give a deep mastery of the algorithms and models. For this purpose, I would highly encourage the students to take relevant classes in CoC, ISyE or other schools. Instead, this class deals with the NLP and LLMs and their applications to finance. The key emphasis is on

applications to finance and the practical implementation of these models for finance use cases and the challenges in applying these models to finance use cases.

Learning Outcomes

The learning outcomes for this course are as follows:

- understand how technology is impacting financial intermediation and how it is changing the landscape of finance
- understand how AI is transforming the financial services industry
- understand the basics of NLP and LLMs and how they can be applied to finance use cases
- understand the challenges in applying NLP and LLMs to finance use cases

Class Format

The class would have two components. Typically, in a given week

- one class would be a lecture where models and concepts are explained with a focus on finance applications
- one class would be a Lab where we would go through the model mathematics, implementation details, including the code and the assignments.

Most of the focus of the class is on the hands-on projects and assignments where students implement the models for finance use cases. We may have some guest lectures.

Required Material

There is no **required** text book for the class. For each of the topics, some relevant papers are assigned. All the papers would be available online and all datasets would be available for download through WRDS or on canvas. In addition, the students may need to do some data annotations as part of the assignments or final project.

Online Information

Course page is maintained on canvas . All relevant information including but not limited to: readings, lectures, presentation schedules and class schedules and any changes to the schedule would be posted on the website. I would strongly recommend that you check the course page on canvas website every week.

Grading

The grade for the class is based on:

- Class Attendance, Participation, Current Event Submission and Discussion - 15%
- Quiz - 5%
- Individual assignments (cumulative)- 45%
- Group Project (cumulative) - 35%

There is no final exam for the class. The presentation of the final project will be held instead of the final exam.

The letter grades for the class would be based on the cumulative weighted score for the class and would be assigned

Letter Grade	Cumulative Score
A	90–100
B	80–89
C	70–79
D	60–69
F	< 60

Regrade Policy: A regrade can be requested and considered **only** on the office hours (see details below) no later than a week after the assignment has been returned.

Assignments and Project

In the first half of the class, there would be a multiple programming and data assignments (5–6) with a cumulative weightage of 45%. The initial assignments will have a lower weight and the later assignments will have a higher weight.

In the second half of the class, you will be working on a final group project based on what you have learned in the first half. The project will have 5–6 deliverables, each having an individual weight (the same format as in the first half of the class), with a cumulative weightage of 35%. The final assignment for the project will be an in-person presentation of the final project. Intermediate presentations are also required.

We will typically post assignments on Tuesdays and the assignment would be due by 10:59am next Tuesday. The deadlines for each individual assignment would be clearly noted on Canvas and they take precedence.

I would suggest that the students read the assignment as soon as it is avalable, think about it on Wednesday and attend the Lab on Thursday. That way, you can get more out of the Lab session.

Please note:

- Each assignment would be self-contained with all the necessary information inclduing the relevant sections below.
- All the individual assignments would be data and programming intensive.
- Python is the primary programming languages for the assignments in the class.
- The total number of assignments would be 5–6 in the first half and 5-6 for the final project. The final assignment for the project will be the report and the slides for the in-person presentation.
- Some of the assignments will be based on the research papers from the Financial Services Innovation Lab (FSIL) at Georgia Tech.
- The assignments will make extensive use of financial textual and tabular data.
- The assignments will make use of large datasets, so writing code efficiently is important. In addition, clean, well-documented code that is reproducible is required to be submitted. We will use Google Colab, Quarto, Jupyter notebooks, etc., for some of the assignments.
- Each successive assignment will build on the previous assignments, so it is important to do well on all the assignments.
- There would be a peer assessment for the final project and these scores would be considered in the final project score.

Grace days: I understand that there may be assignments, quizzes or exams in other classes at the same time or there may be interviews or other career service related events that conflict with the assignment deadlines. That's why, I give each student a total of 5 grace days for all the assignments combined where in students can submit assignments late without penalty.

Please note:

- a student can use a max of 2 grace days on any one assignment
- there are no partial grace days i.e. everytime the student uses a grace day, it can be only 1 day or 2 days with a total limit (through out the term) of 5 days
- for late submissions where grace days cannot be applied (i.e. 3+ days after an assignment deadline or when no grace days are left to use), each late day will result in a 15% deduction of the total assignment score

- Please use them wisely and note that the initial assignments are very easy where as the assignments towards the middle or the end of the class would take much more time. In addition, career search demands are higher at specific weeks in the term.

Participation

The participation grade consists of two components: attendance and weekly TL;DRs of current events, technical developments and announcements that are relevant for the class. Each week, students are expected to select relevant news stories and prepare a one-page TL;DR summarizing them. I will announce more details Once per week, I will randomly cold-call several students to discuss their TL;DRs as well as other major developments relevant for the class from that week.

Cold-calling to discuss the current event submissions will be the primary method for tracking attendance. I understand that interviews, academic obligations, or illness may occasionally prevent you from attending class. Nevertheless, attendance is mandatory for this course. The random cold-calling system is designed to account for occasional unavoidable absences. That said, on some days I may take attendance for the entire class.

Office Hours

To support learning and assist with completing assignments and course material, the Teaching Assistants for this course will hold office hours twice a week for one hour each session. Office hours will be held **in person** by default; however, a TA may choose to move an office hour online or reschedule in the event of personal circumstances. The specific days and times of office hours will be announced later. As mentioned before, requests for regrades may be submitted and considered only during TA office hours.

Required Material

There is no **required** textbook for the class. I will distribute my lecture notes after class. There may be some assigned readings in addition to the class notes. All the material will be posted on canvas.

Other Useful Resources

1. Andrej Karpathy
2. Luis Serrno
3. Sebastien Raschka
4. Jay Alammar

5. Fast AI
6. 3Blue 1Brown

The students are strongly encouraged to read Wall Street Journal, Bloomberg Business Week, Financial Times, Economist or some other source for financial information. This information would be helpful for class room discussions.

Compute, Data and Software

For this course, students are asked to use Google Colab Pro. Google Colab provides convenient access to GPUs, which are required for running open-source LLMs; however, GPU availability is limited without a Pro subscription (approximately $10/month). We will not be able to provide access to the PACE-ICE cluster.

Software You will be required to install basic software. Everyone will at least need VS Code, python, anaconda (miniconda will work), and Git. These are covered in the bootcamp and will be covered in the first Lab.

Academic Honor Code Georgia Tech academic honor code is avaialable at https://policylibrary.gatech.edu/student-life/academic-honor-code

All students are expected to be familiar with the [Georgia Tech Honor Code] (https://catalog.gatech.edu/rules/17/), and to conform to all its requirements.

Information about Diversity and Disabilities

The Office of Disability Services provides accessible programs, services, activities, and reasonable accommodations for students with a disability as defined by section 504 of the Rehabilitation Act of 1973, as amended, and by the Americans with Disabilities Act of 1990 and 2008. Services are available to ensure that individuals with disabilities have an equal opportunity to pursue education, employment, or other campus programs, activities, or services.

See https://catalog.gatech.edu/policies/disabled-assistance/ for more information

Course Rules

- You must display your name card throughout the term.
- **No** cell phone usage in class. During the lecture or discussion, you should not be looking at your phone, iPad, or computer screen.
- Please do **NOT** use laptops or computers in the class room unless I ask you to do so. If I have to ask you to close your laptop, it would count against your class participation.
- You are only allowed to use your gadgets when we are having hands-on coding during the lecture.
- You are expected to be familiar with the [Georgia Tech Honor Code] (https://catalog.gatech.edu/rules/17/), and to conform to all its requirements.

- Be prepared when you come to class. There will be a lot of **cold-calling**.
- To ensure a prompt response to e-mail, please put **course number and class time** in the subject line, e.g. **MGT 8803-SC -11:00-12:15: Question about Assignment 1**

Attendance and/or Participation

Attendance is mandatory for all class sessions. If you are unable to attend a class session, please notify me in advance and provide a valid reason for your absence. Participation in class discussions is also expected and will be factored into your overall grade.

Academic Integrity

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. Review Georgia Tech's Honor Code and the student Code of Conduct.

Any student suspected of cheating or plagiarism on a quiz, exam, or assignment will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.

Accommodations for Students with Disabilities

If you are a student with learning needs that require special accommodation, contact the Office of Disability Services (404-894-2563) as soon as possible to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible in order to set up a time to discuss your learning needs.

Student-Faculty Expectations Agreement

At Georgia Tech, we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. The Student-Faculty Expectations articulate some basic expectations that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.