MGMT 675
AI-Assisted Financial Analysis

RICE | BUSINESS
JONES GRADUATE SCHOOL OF BUSINESS
VIRANI UNDERGRADUATE SCHOOL OF BUSINESS

Instructor

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Course Overview

The emergence of generative AI has been reshaping financial workflows and careers. This course prepares MBA students to leverage AI for financial analysis. The course covers the following topics:

1. Prompt engineering
2. Corporate implementations of AI
3. Using AI to write code for financial analysis, visualization, and report generation
4. Using AI to create apps to automate the above
5. Creating custom chatbots
6. Creating AI agents for financial analysis
7. In-depth study of using AI for pro forma forecasting and DCF valuation

Evaluation

Grades will be based on three group projects:

1. AI + Python Cost of Capital Exercise: data, calculation, visualization, report generation (25%)
2. Use AI + Python to create a Cost of Capital app (25%)
3. Create a custom chatbot for Financial Forecasting and DCF Valuation (50%)

For each project, the deliverables are:

- A working notebook/app/chatbot prototype
- A two-page Word doc explaining the development and use of the notebook/app/chatbot

Honor Code

The Rice University honor code applies to all work in this course. Use of generative AI is of course permitted.

Disability Accommodations

Any student with a documented disability requiring accommodations in this course is encouraged to contact me outside of class. All discussions will remain confidential. Any adjustments or accommodations regarding assignments or the final exam must be made in advance. Students with disabilities should also contact Disability Support Services in the Allen Center.

Schedule

Week 1: Introduction

- Prompt engineering for investment analysis
- Corporate implementations of AI
- HBS case: Implementing AI at Deloitte
- Other reading:
  - State of AI in Business 2025
  - Generative AI Reshaping Teamwork and Expertise

Week 2: AI + Coding for Financial Analysis

- Google Colab, Jupyter notebooks, and Gemini
- Online data: Yahoo Finance, FRED, French's data library, EIA, EDGAR
- Generating Word docs and PowerPoint decks with Python
- Portfolio optimization in Python
- Project 1 assigned: AI + Python Cost of Capital Exercise

Week 3: Building Apps

- Streamlit and ngrok for app creation and deployment on Colab
- Building a retirement planning simulation app
- Building a portfolio optimization app
- Project 1 due
- Project 2 assigned: Cost of Capital app

Week 4: Custom Chatbots and AI Agents

- API calls
- System prompts vs. RAG vs. fine-tuning
- Building a retirement planning agent
- Building a portfolio optimization agent
- Chatbots vs. apps vs. AI agents
- Project 2 due

Week 5: AI-Assisted DCF Analysis

- Financial ratios, growth rates, and pro forma statements
- Evaluating chatbots and 'AI + coding' for forecasting and valuation
- HBS case: Valuing Walmart 2010
- Project 3 assigned: Forecasting and Valuation chatbot

Week 6: Presentations and Wrap-Up

- Miscellaneous: Database chatbots, production deployment of apps, local installations, TBD
- Wrap-up
- Project 3 presentations
- Project 3 due