MGMT 675
Generative AI for Finance

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

Instructor

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Learning Objectives

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 is organized around the folowing principles:
What you will learn:

1. How to work with AI to do financial analysis
2. How custom chatbots and AI agents work
3. How to work with AI to build custom chatbots and AI agents for financial analysis

Item #1 is essential today. Item #2 is valuable today. The purpose of #3 is

3.1 More practice on #1

3.2 A deeper understanding of #2

3.3 You might end up at a small firm and be the AI expert!

AI Tool

We are going to use Anthropic's Claude for the course. Claude Opus and Sonnet are the best coding LLMs. Also, Anthropic recently released Excel integration, so Claude can generate fully functioning, nicely formatted Excel workbooks. In addition, Anthropic created the Model Context Protocol (MCP) and Claude Skills, which substantially simplify the creation of AI agents. In fact, Claude Desktop or Claude Code can be used as general purpose agents. OpenAI also uses MCP and has a coding agent along the same lines as Claude Code, but Anthropic is a bit ahead in this area at the moment.

Evaluation

Grades will be based on four elements (25% each). The first three are **group projects**.

1. AI cost of capital exercise: calculation, visualization, report generation

2. Cost of capital app
3. Valuation Skill for Claude
4. Seated exam with AI allowed

For each of the group projects, the deliverables are:

- A chat/app/agent
- A two-page Word doc explaining development and use

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

- Collaborating with AI: Claude + Excel for valuation
  - Case study: Valuing Walmart 2010
- Corporate implementations of AI
  - Case study: Implementing AI at Deloitte
  - Other reading:
    - CNBC Report on JPMorgan Chase's LLM Suite
    - State of AI in Business 2025
    - Generative AI Reshaping Teamwork and Expertise

Week 2: Vibe Coding for Data Analysis

- Claude Desktop and Google Colab
- Cleaning, sorting, filtering and aggregating
- Data visualization
- Generating Word docs and PowerPoint decks
- Installing Python locally and Claude Code

Week 3: Vibe Coding for Financial Analysis

- Retirement planning simulation
- Mean-variance portfolio optimization
- Mutual fund performance evaluation

Week 4: Custom Chatbots and Apps

- Building and running Streamlit apps
- Examples: retirement planning and asset allocation
- Custom chatbots: API calls, system prompts, and RAG
- Building custom chatbots as Streamlit apps

Week 5: Automating DCF Analysis

- Converting rules into apps
- Configuring apps as chatbot tools
- Fine-tuning output (Excel, PowerPoint, Word)
- Collaborating with the chatbot on assumptions
- Group project 2 due

Week 6: Deployment and Databases

- Alternatives for deploying apps/chatbots/agents
- Deploying databases
- Creating database agents
- Wrap-up
- Group project 3 due