RICE | BUSINESS
Jones Graduate School of Business

Course Introduction

MGMT 675: Generative AI for Finance

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From Makers to Checkers

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What we're working towards is that every employee will have their own personalized AI assistant; every process is powered by AI agents, and every client experience has an AI concierge.

You'll still have people at the top who are managing and have relationships with clients, but many, many of the processes underneath are now being done by AI systems.

Workers would shift from being creators of reports or software updates, or 'makers' ... to 'checkers' or managers of AI agents doing that work.

The New Skills Landscape

Brookings Institute, 2025

As AI models begin to handle underwriting, compliance, and asset allocation, the traditional architecture of financial work is undergoing a fundamental shift.

As job descriptions evolve, so does the definition of financial talent. Excel is no longer a differentiator. Python is fast becoming the new Excel.

But technical skills alone will not cut it. The most in demand profiles today are those that speak both AI and finance.

Why AI is Useful for Finance

- AI can look up and answer questions about company practices, past company reports, communications, etc.
- AI can search the web, pull data from databases, or call APIs
- AI can analyze documents, contracts, or financial statements
- AI can write code for financial analysis and building things (vibe coding)
- AI can generate Excel workbooks
- AI can draft reports (Word docs) and presentation decks (PowerPoint)
- AI can automate repetitive tasks and workflows
- AI can communicate directly with clients (with strong controls)

Why AI with Code Execution is Especially Useful

- Attaching a code execution tool enables:
  - Data analysis with real calculations
  - Visualizations and charts
  - File processing (Excel, CSV, PDF)
- Transforms chatbots into computational tools

Course Outline

Learning Objectives

1. How to use AI with code-execution tools to perform financial analysis, handle data and text, and generate visualizations, spreadsheets, reports, and presentations
2. How to use AI with other tools – terminal execution, browser control, database connections – for finance applications
3. How to collaborate with AI in planning, executing, and evaluating financial analysis
4. How the different AI code execution environments work - cloud sandboxed, virtual machines, local
5. How to create and deploy task-specific prompts that can be used repeatedly
6. How to reduce the hallucination rate of AI through retrieval-augmented generation, fine tuning, or building specialized models
7. How AI can be used to classify the sentiment of news or social media for trading

Course Topics

1. AI that writes and executes code
2. AI coding for mean-variance analysis
3. AI-written code in Jupyter notebooks
4. Connecting tools to AI
5. Connecting a virtual machine to AI
6. Connecting your computer to AI
7. Using AI inside Excel
8. Specialized prompt automation
9. Using AI inside an IDE
10. AI for DCF valuation
11. Retrieval augmented generation
12. Fine-tuning and small language models
13. Building an AI agent
14. Trading on news with AI

Grading

- Six group assignments (15% each)
- Due Tuesdays 11:59 pm March 24 through April 28 (exam week)
- Each assignment consists of three exercises
- Peer assessments (10% each)