MATH 5816
Continuous Time Financial Modelling
Term 3 2025
Mini Project

Mini Project

Due: 23th November 2025 by 2 pm on Moodle - Turnitin

You must submit one PDF file for the mini-project via Moodle Turnitin in the individual submission portal since the University requires each student to submit the mini project in **Moodle Turnitin**. Then, only one group member will submit the same PDF file in the group submission.

Your submission in **Moodle Turnitin** will be your declaration that the mini project is your own work, except where acknowledged and that you understood the University Rules on plagiarism. You must cite if you used any source material in your solutions. You need to include your AI's prompts and properly cite its use.

This mini project must be typed up. No handwritten submission.

For this mini project, you are allowed to work in groups of 4 (max).

You must list all members of your group, including their student numbers, in the top-right corner of each page of the mini project.

Maximal number of pages: 10

Important skills to demonstrate in this mini project:

- learn about AI-Powered Stock Price Prediction
- learn how to summarise an academic paper by adding some theoretical papers to support your use of the AI output

- applying your prediction to several concrete examples

The mini-project involves

- AI-Powered Stock Price Prediction
- Objective: Forecast market movements.
- Description: Train LSTM/Transformer models on financial datasets (Yahoo Finance API). Predict daily/weekly stock prices.
- Tools: Pandas, PyTorch, Matplotlib.
- Tools: Can only use the free version of ChatGPT or CoPilot
- Challenges: Handling market volatility.
- Impact: Useful for fintech platforms and traders.
- Provide a brief report demonstrating your understanding of mathematical finance from the course and the future use of AI in financial modelling.

You need to explore the vast potential of artificial intelligence. By taking on this mini project, you can hone your technical expertise, gain hands-on experience with industry-standard tools, and address real-world challenges in the financial markets.