The University of Chicago Booth School of Business

Business 41206-01/81
Decoding FinTech - Winter 2023

Instructor: Dacheng Xiu
Office: HPC 354
Phone: 773 | 834 7191
E-mail: dacheng.xiu@chicagobooth.edu

Teaching Assistants:
Jonathan Li
E-mail: jmzhl@uchicago.edu

Emily Rhodes
E-mail: eprhodes@uchicago.edu

Syllabus

Overview

This course provides a high-level introduction to two rapidly developing technologies: artificial intelligence and blockchain. Artificial intelligence, in particular machine learning and natural language processing algorithms, has been adopted by a variety of real-world FinTech companies that build their business based on credit scoring, fraud detection, real-estate valuation, portfolio management, and quantitative trading. Blockchain technology is the cornerstone of cryptocurrencies, smart contracts, and decentralized finance, a rising industry with great potential to disrupt the future of finance.

This course is designed for those who are interested in the inner workings of the technologies, as well as their applications in the FinTech industry. Specifically, it places emphases on the philosophy and intuition behind these technologies, as well as their promises and perils, but not on the technical details. Students are expected to have completed MBA core courses before taking this course. The coding component is optional. Prior coding experience is not required.

Course Outline

Lecture 1: Introduction to FinTech
- What is FinTech?
- What is AI, Machine Learning, and Big Data?

Lecture 2: The Promises and Pitfalls of FinTech
- Case I: P2P Lending
- Case II: Zillow Offers
- Case III: Robo-Advisors

Lecture 3: Machine Learning for Investment
- Case I: Can Machines Learn Finance?
- Case II: Reinvent Technical Trading

Lecture 4: Natural Language Processing

- NLP Tasks, Sentiment Analysis
- State-of-the-Art Language Models, ChatGPT
- Case: Sentiment Analysis of US Equity

Lecture 5: Blockchain Technology and Decentralized Finance

- Cryptocurrencies, Elements of Blockchain
- Smart Contracts, DeFi
- CBDC, NFT, Web3.0, Metaverse Economy

Text and Class Notes

There is no required text for this course. The provided lecture notes and cases are self-contained.

Evaluation

Grades will be determined by 4 homework assignments (40%), participation and professionalism (10%), and an individual final project (50%). For homework assignments, you are encouraged to work with a group of other students (max size 4) and each group only need turn in one write-up. Homework assignments are due each class and should have a clear and professional presentation.

Special Notes

The information contained in these documents is confidential, privileged and only for the information of the intended recipient and may not be used, published or redistributed without the prior written consent of the Booth faculty member(s) teaching the course.

If you require any accommodations for this course, as soon as possible please provide me with a copy of your Accommodation Determination Letter (provided to you by the Student Disability Services office) so that you may discuss with me how your accommodations may be implemented in this course. The University of Chicago is committed to ensuring the full participation of all students in its programs. If you have a documented disability (or think you may have a disability) and, as a result, need a reasonable accommodation to participate in class, complete course requirements, or benefit from the University's programs or services, you are encouraged to contact Student Disability Services as soon as possible. To receive reasonable accommodation, you must be appropriately registered with Student Disability Services. Please contact the office at *773-702- 6000/TTY 773-795-1186* or *disabilities@uchicago.edu*, or visit the website at *disabilities.uchicago.edu*. Student Disability Services is located at 5501 S. Ellis Avenue.