

Artificial Intelligence in FinTech

Department: Fudan International Summer Session 2026

Course Code	GEIS10001						
Course Title	Artificial Intelligence in FinTech						
Credit	2	Experiment (including Computer) Credit		Practice Credit		Aesthetic Education Credit	
Credit Hours Per Week	9 credit hours per week. 36+3 tutorial hours in total (one credit hour is 45 minutes)	Education on The Hard- Working Spirit Credit Hours		Language of Instruction	Engli sh	Honors Course	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Course Type	<input type="checkbox"/> Core General Education Course			2+X Major :			
	<input type="checkbox"/> Specific General Education Course			<input type="checkbox"/> Professional Core Course			
	<input type="checkbox"/> Basic Course in General Discipline			<input type="checkbox"/> Professional Advanced Course			
	<input checked="" type="checkbox"/> Others			Non 2+X Major :			
				<input type="checkbox"/> Professional Compulsory Course			
				<input type="checkbox"/> Professional Elective Course			
Course Objectives	<p>AI technology is reshaping the global financial industry. Understanding both the opportunities and risks of AI applications in finance is essential for responsible professionals.</p> <p>This course provides students with a systematic understanding of artificial intelligence technologies in the financial technology domain. Students will develop critical thinking about AI ethics, regulatory compliance, and social responsibility in financial AI applications.</p>						
Course Description	Artificial Intelligence (AI) is fundamentally transforming the financial industry. From intelligent customer service to automated risk control, from algorithmic trading to personalized investment advisory, AI technologies are becoming the core infrastructure of modern finance.						

	<p>This course provides a comprehensive introduction to AI technologies in the financial technology (FinTech) domain, combining theoretical foundations with hands-on practical projects. The course covers:</p> <ul style="list-style-type: none"> ● AI Foundation: Machine learning algorithms, deep learning architectures, large language models ● Financial Application Scenarios: Risk control, intelligent investment advisory, quantitative trading, cross-border payments ● Technical Implementation: Python-based data processing, model development, deployment strategies ● Risk & Compliance: Financial AI risks, regulatory requirements, ethical considerations
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Course Requirements:

Students should have the following prerequisites:

- Basic knowledge of linear algebra and probability statistics
- Some basic programming experience (Python preferred)
- Understanding of fundamental economic/financial concepts (helpful but not required)

Teaching Methods:

The instructor will use a combination of:

- In-class lectures: Theoretical frameworks and technical concepts
- Case demonstrations: Real-world financial AI application examples
- Coding: Python programming exercises and model implementation

Course Director's Academic Background:

Sen Liu is an associate professor at Fudan University. His research interests broadly include distributed machine learning, FinTech security architectures, and next-generation computer networks. He has published more than 60 papers in top-tier conferences and journals, including SIGCOMM, EuroSys, ICDE, SIGMETRICS, AACL, TON, and INFOCOM, and holds more than 10 patents. His professional service includes membership on the Executive Committee of the Technical Committee of CCF-TCI, CCF Digital Finance, and ACM SIGCOMM China. He received the ACM SIGCOMM China Rising Star Award in 2022 and was selected for the Shanghai Super Postdoctoral Incentive Plan in 2020. He has served as a TPC member or reviewer for numerous international conferences and journals, such as TON, INFOCOM, KDD, and TPAMI. For more information, please refer to <https://senliu.me>.

Instructor's Academic Background:

The instructor is the same as the Course Director. Please refer to the above section for detailed academic background.

Members of Teaching Team

Name	Gender	Professional Title	Department	Responsibility
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Sen Liu	Male	Associate Professor	College of Computer Science and Artificial Intelligence / Institute of Financial Technology	Course design, instruction, and assessment

Course Schedule:

- Lecture 1 Introduction to Financial Technology and AI Basics
- Lecture 2 Core Machine Learning Algorithms
- Lecture 3 Deep Learning Fundamentals and Financial Applications
- Lecture 4 Financial AI Core Scenarios and Technical Analysis (I)
- Lecture 5 Financial AI Core Scenarios and Technical Analysis (II)
- Lecture 6 Financial AI Core Scenarios and Technical Analysis (III)
Financial Data Processing and Machine Learning Risk Control Model
- Lecture 7 Development
- Lecture 8 Large Model Basic Applications and Lightweight Fine-tuning
- Lecture 9 Financial AI Agent Development and Scenario Implementation
- Lecture 10 Financial AI Risks, Compliance and Frontier Trends
- Lecture 11 Comprehensive Case Review and Practical Project Improvement
- Lecture 12 Course Summary and Assessment

The design of class discussion or exercise, practice, experience and so on:

This course integrates a combination of lectures, hands-on programming exercises, and group case discussions to accommodate students from diverse academic backgrounds. Programming sessions allow students to apply theoretical concepts through practical coding and model-building tasks. Group discussions are incorporated throughout the course to analyze real-world financial AI cases and foster collaborative learning.

If you need a TA, please indicate the assignment of assistant:

Teaching assistants will provide support for students during project implementation and offer assistance when students encounter difficulties.

Grading & Evaluation:

- Attendance 10%
- In-class Participation 30%
- Projects 40%
- Final Exam 20%

Usage of Textbook: Yes (complete textbook information form below) No

Textbook Information (No more than two textbooks) :

Title	Author	ISBN	Publishing Time	Publisher	Type I	Type II
					<input type="checkbox"/> Self-compiled Textbook (Published) <input type="checkbox"/> Non-mainland Textbook <input type="checkbox"/> Other Textbook (Published)	<input type="checkbox"/> National Planning Textbook <input type="checkbox"/> Provincial and Ministerial Planning Textbook <input type="checkbox"/> School Level Planning Textbook <input type="checkbox"/> Others
					<input type="checkbox"/> Self-compiled Textbook (Published) <input type="checkbox"/> Non-mainland Textbook <input type="checkbox"/> Other Textbook (Published)	<input type="checkbox"/> National Planning Textbook <input type="checkbox"/> Provincial and Ministerial Planning Textbook <input type="checkbox"/> School Level Planning Textbook <input type="checkbox"/> Others
Teaching Materials & References:						