COURSE DETAIL

MACHINE LEARNING AND STOCHASTIC SIMULATION: APPLICATIONS FOR FINANCE, RISK MANAGEMENT AND INSURANCE

Country
United Kingdom - England

Host Institution
London School of Economics

Program(s)
Summer at London School of Economics

UCEAP Course Level
Upper Division

UCEAP Subject Area(s)
Statistics Computer Science

UCEAP Course Number
130

UCEAP Course Suffix
S

UCEAP Official Title
MACHINE LEARNING AND STOCHASTIC SIMULATION: APPLICATIONS FOR FINANCE, RISK MANAGEMENT AND INSURANCE

UCEAP Transcript Title
MACHINE LEARNING

UCEAP Quarter Units
5.50

UCEAP Semester Units
3.70

Course Description

Are you looking to develop the skills to solve real-world challenges in finance, risk management, and insurance? These fields often deal with unpredictable phenomena—like investment decisions, insurance claim patterns, or pricing derivatives—which require robust stochastic models and advanced machine learning techniques. To tackle these challenges effectively, it’s essential to use robust statistical techniques and calibration methodologies to ensure models are reliable. This course equips students with the tools to apply modern statistical and machine learning methods to these complex problems. Students start by exploring Monte Carlo methods, simulating stochastic processes, and applying Generative Adversarial Networks (GANs) in risk management. They then connect Generalized Linear Models to deep neural networks, discovering their practical applications in the insurance industry. The course also addresses the challenges of calibrating models to ensure their accuracy and reliability. Combining rigorous theory with hands-on coding exercises in Python, students gain experience implementing real-world case studies while strengthening their core data science skills.

Language(s) of Instruction
English

Host Institution Course Number
ME319

Host Institution Course Title
MACHINE LEARNING AND STOCHASTIC SIMULATION: APPLICATIONS FOR FINANCE, RISK MANAGEMENT AND INSURANCE

Host Institution Course Details
https://www.lse.ac.uk/study-at-lse/summer-schools/summer-school/courses/researc...

Host Institution Campus
Host Institution Faculty
Host Institution Degree
Host Institution Department Statistics
Course Last Reviewed 2025-2026

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