

IBSS RESEARCH SEMINAR

Organized by: RCE 2 Emerging Technologies and Innovation

From Econometrics to Machine Learning: Transforming Empirical Asset Pricing

Abstract

Empirical asset pricing is undergoing a transformation with the advent of big data and machine learning. Traditional multi-factor models offer simplicity and interpretability but struggle with high-dimensional covariates and nonlinear relationships. Machine learning, with its predictive power and flexibility, provides a promising alternative. This paper surveys the transition from econometrics to machine learning, tracing the evolution of asset pricing models, addressing empirical challenges, and comparing the strengths and limitations of both approaches. A unified framework based on the stochastic discount factor is proposed, integrating machine learning while preserving economic interpretability. By emphasizing predictive accuracy and theoretical rigor, this paper highlights how machine learning can reshape empirical asset pricing, offering deeper insights into financial markets and advancing research toward maximizing out-of-sample performance.

Presenter

Dr. Chuan Shi is an Assistant Professor (Teaching) and Professor of Practice in Financial Engineering at the School of Data Science, the Chinese University of Hong Kong, Shenzhen. He holds a Ph.D. in Operations Research from MIT and received both his B.Eng. and M.Eng. degrees from Tsinghua University.

His expertise spans data analysis, statistical modeling, and machine learning, with applications in manufacturing optimization and quantitative finance. He is the co-founder of Beijing Liangxin Investment Management and serves on the editorial board of Computers in Industry.

Additionally, he is the author of the influential quantitative finance WeChat public account 川总写量化 where he shares cutting-edge research and practical insights. As an educator, he bridges academia and industry, nurturing the next generation of data science professionals.

■ Date
21 April 2025

■ Time
10:00 AM-11:30 AM (China Standard)

■ Location
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