

Mean-Reverting Portfolio Construction and Optimal Timing Strategy

Dr. Tim Leung

Professor

University of Washington

Abstract: In this talk, we discuss an approach to construct portfolios with mean-reverting price dynamics. For any given portfolio, we analyze the optimal timing of trades subject to fixed transaction costs. It involves solving an optimal double-stopping problem in order to determine the optimal times to enter and subsequently exit the market when prices are driven by an Ornstein-Uhlenbeck (OU) process. Numerical examples and a Python package are provided to illustrate the optimized trading strategies.

Bio: Tim Leung is the Boeing Professor in the Department of Applied Mathematics and Director of the Computational Finance & Risk Management (CFRM) program and Quantitative Analytics Lab at University of Washington in Seattle. He has previously taught in the Department of Applied Mathematics & Statistics at Johns Hopkins University and in the Department of Industrial Engineering & Operations Research at Columbia University. He obtained his BS from Cornell University and PhD from Princeton University. His research in Quantitative Finance has been funded by the National Science Foundation (NSF). He has published over 60 peer-reviewed articles and several books on the topics of Mean Reversion Trading, ETFs, and more. Professor Leung is on the advisory board of the AI for Finance Institute and the editorial board of multiple journals. He has served as the Chair for the INFORMS Finance Section and Vice-Chair for the SIAM Activity Group on Financial Mathematics & Engineering.