Introduction

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FINM 36700: Portfolio Management

Outline

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Why this class?

- Foundations of quant finance
- Cutting-edge tools
- Focus on application

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Objectives

- Attribution
- Risk scenarios
- Replication and Decomposition
- No-arbitrage Pricing
- Forecasting
- Portfolio optimization

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Tools

Tools include

- Parametric and non-parametric methods
- Simulation
- Dimension reduction
- Machine Learning

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Quant Finance

- Know the market
- Model it mathematically
- Estimate it statistically
- Implement it computationally
- Communicate your results

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Career areas

- Investment allocation
- Risk management
- Trading
- Computational finance

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Who am I?

10+ years of teaching experience.

- Taught at the Booth School of Business, Economics Department, and Master of Financial Math
- Associate Senior Instructional Professor in the Department of Mathematics.

10+ years of industry experience

- quant research and implementation for hedge funds
- consulting for various financial and non-financial firms
- advising and training for trading firms

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Outline

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Portfolio Management Procedure

1. Define the security universe
2. Model security risk and performance
3. Forecast returns
4. Define the portfolio's objective
5. Define portfolio's constraints
6. Simulate the candidate portfolios
7. Optimize among the portfolios
8. Assess the constructed portfolio's performance

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