Roundtable: University of Vilnius / George Mason University / Freddie Mac

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Agenda

- Introductions
- Computer Science at GMU
  - Course example: CS 530 Mathematical Foundations in Computer Science
  - Class examples: Number Theory, Math Logic - JSONiq
- Financial Technology
  - Definitions
  - Example: Trading Technology on Wall Street, Freddie Mac
  - Topic: Profit and Loss (PnL) computation
- Collaboration Options

Introductions

- Academic Experience
  - Kiev HS, University of Vinius, University of Memphis, George Mason University
  - Expert Systems, Neural Networks, Graph Algorithms
- Corporate Experience
  - Lietuvos Mokslinės Informacijos Institutas, Vilnius, Lithuania
  - St. Jude Children's Research Hospital, Memphis, TN
  - Fannie Mae, Washington, DC
  - JP Morgan Chase, New York, NY
  - Freddie Mac, McLean, VA

Computer Science at George Mason

- Degrees: B.S., M.S., Ph.D.
- Volgenau School of Engineering
  - Departments: Computer Science, Information Sciences and Technology, System Engineering and Operations Research, etc.
- Department of Computer Science
  - Majors: Computer Science, Software Engineering, Information Systems, Information Security and Assurance, Applied Computer Science, Data Analytics, Information Technology
- M.S. in Computer Science
  - Course example

Financial Technologies

- University of Stanford - **STRAMGT 538** Financial Technologies (FitTech):
  - This class provides an overview of the rapidly evolving world of financial technologies. New market entrants are promising to change the way we borrow, save, invest, and transact. Incumbents enjoy substantial market power but are struggling to keep up technologically as they wrestle with antiquated core infrastructure.
- Financial Engineering
  - Interdisciplinary field which applies mathematical practice and methods to provide solutions in finance. Institutions of higher education have several names for these programs, including financial engineering, financial mathematics, mathematical engineering, and computational finance

Trading Technologies

- Applications
    - Transactions management (buy/sell)
    - Positions maintenance
    - Profit and Loss
    - Risk (financial models)
    - Controls
- Example: Profit and Loss (PnL)
    - Measures trading desk's performance on a daily basis
    - Identifies attribution of different PnL components to desk's performance

Collaboration Options

- Financial Technologies Lectures
  - Giving students exposure to IT application in Finance
- Students exchange
  - May include internship opportunities at Freddie Mac
- Faculty exchange
  - Seminars by UV/GMU professors
- Others?

Note: GMU and Freddie Mac have been informed of this discussion