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Education

M.S. Applied Mathematics, University of Michigan, Ann Arbor, 2010 (Expected)

M.S.E Financial Engineering, University of Michigan, Ann Arbor, 2010 (Expected)

B.S. Mathematics, University of Michigan, Ann Arbor, 2008
Graduated in three years with honors.

Publications and Working Papers

"Detecting Sector Interdependence Regime Changes via Spectral Graph Theory" (with Ahmet Duran), 2009.

"Law as a Seamless Web? Comparing Various Network Representations of the United States Supreme Court Corpus" (with Daniel Katz, Jonathan Zelner), 2009. Submitted to the Journal of Artificial Intelligence and Law, 7 pages.

"Regional Hegemonic Stability Theory?: Insights from a Social Network of the International System 1945-2000" (with Daniel Katz, Paul Poast), 2009.

"Community Structure in the Network of Supreme Court Cases" (with Daniel Katz, Jonathan Zelner, James Fowler (UCSD), & Jim Spriggs), 2009.

"Interactions between Institutional Rules and Network Norms in Communal Resource Governance" (with Arun Agrawal, Daniel G. Brown, Gautam Rao, Rick Riolo, & Derek Robinson), 2008. Submitted to PNAS, 18 pages.

"A Profitable Risk Management Despite Transaction Cost" (with Ahmet Duran), 2008. Submitted to the Journal of Quantitative Finance, 17 pages.

"Long-Short Mutual Fund Cross-Correlation Analysis: Comparison of Two Market Regimes" (with Ahmet Duran), 2007.

Invited Talks and Presentations

"Regional Hegemonic Stability Theory?: Insights from a Social Network of the International System 1945-2000" (with Daniel Katz, Paul Poast).
Presenting at the 21st World Congress of Political Science.

"A Profitable Risk Management Despite Transaction Cost." (with A. Duran)
Presented at the 2008 SIAM Conference on Financial Math.
Presented to the 2008 Financial and Actuarial Math Seminar, University of Michigan.

Research Experience

Research Assistantship, SNRE Sep 2008–Present
Arun Agrawal, Daniel G. Brown, Rick Riolo
Agent-based modeling of the relationship between common pool resources, social networks, and institutional governance.

Research, Mathematical Finance Oct 2007–Present
A. Duran (UM)
Develop methods of asset comovement detection and market-neutral strategies based on graph theory, spectral analysis, and higher-order moments.

Research, Political Science Oct 2007– Jan 2008
Michigan State University, Department of Political Science
Developed, extended, and documented agent-based models of election, corruption, and civil war. Compared and calibrated computational models with empirical data.
"Private Gain for Public Benefit: Reelection, Accountability, and Corruption"
"REsCape: an Agent-Based Framework for Modeling Resources, Ethnicity, and Conflict"

Research, Financial Engineering Spring 2007
Jussi Keppo (University of Michigan, Ann Arbor)
Testing market efficiency and arbitrage strategies on the day-ahead ISO-NE electricity futures market.

Developer, Google Summer of Code Summer 2007, 2008
Google & Department of Complex Systems
Develop software infrastructure for open and reusable research methods in mathematical modeling.

Employment

Computer Consultant
University of Michigan, Center for the Study of Complex Systems, Ann Arbor 2005–Present
Administer rack servers, HPC modeling cluster, faculty workstations.
Java/Matlab/R, XHTML/CSS, LaTeX.

Asset Allocation & Backtesting Consultant
Private & Non-Profit Clients 2007–2008
Develop, test, and consult with clients on long-term and hedged asset allocation strategies.

Volunteer Activities

Founder, ETF Central 2007-Present
http://www.etf-central.com/
Custom and automated analysis of over 1200 exchange-traded and closed-end funds.

Analyst, Seeking Alpha 2007-Present
http://www.seekingalpha.com/author/michael-bommarito
Contribute over 50 articles to the leading online independent provider of market analysis.

Exams

GRE, 2007: 800/800 Math, 660/800 Verbal, 5 Analytical Writing

Computer Skills

Expert: Matlab, Python, Linux, C++ , SQL, Java

Intermediate: Excel, R, Mathematica, LaTeX, PHP, Perl, XHTML/CSS, BASH

Proficient: SAS, STATA, MPI

Mathematical Skills

Expert: Linear/Nonlinear Differential Equations, Probability and Stochastic Processes, Linear Algebra

Intermediate: Random Matrix Theory, Spectral Theory, Numerical Methods

Recommenders

Carl P. Simon, Director of the UM Center for the Study of Complex Systems. University of Michigan.

Scott E. Page, Professor of Political Science, Complex Systems, and Economics. University of Michigan.

Rick L. Riolo, Research Scientist. University of Michigan.

Ahmet Duran, Assistant Professor of Mathematics, University of Michigan.