

Anton Molyboha

Personal Profile

An enthusiastic team-player with a diverse mathematical knowledge, programming skills, and a passion for doing good.

Employment History

Feb 2017 - Present Bromberg Lab, Rutgers University, New Brunswick, NJ

Postdoctoral Research Associate

Statistical analysis and machine learning of human microbiome in connection with the host's genome

Oct 2010 - Aug 2016 Teza Technologies, Chicago, IL and New York, NY

Quantitative Researcher

As an effective member of an inter-disciplinary team, made crucial improvements to trading strategies:

- Developed several techniques to detect "buy/sell" imbalance ("Feature development")
- Verified stability and statistical significance of predictors; refined techniques for such analysis
- Developed multiple price predictors whose performance was later proven in production

Jun 2009 - May 2010 Stevens Institute of Technology

Postdoctoral Researcher

Research in Mathematical Physics:

- Co-authored a novel shape optimization algorithm for a fluid dynamics problem
- Fully implemented the algorithm in Mathematica

Scientific Interests

Probability and Statistics

Optimization

Machine Learning

Risk measures

Bioinformatics

Software Engineering Skills

■ Programming Languages

Java/Scala

Python

C++

Mathematica

MATLAB

■ Miscellaneous

git, Subversion, Linux

- **Basic knowledge**

UML, Perl, cryptography, OOP design patterns

Education

2004-2009 PhD in Pure and Applied Mathematics - Stevens Institute of Technology

Thesis: *Optimal Sensor Placement for Threat Detection*

1998-2004 BsC and MsC in Applied Physics and Mathematics - Moscow Institute of Physics and Technology

Master's thesis: *Cointegration Analysis and Forecasting of Several Ukrainian Food Price Series*

Publications

- Anton Molyboha, Michael Zabaranin, *Stochastic Optimization of Sensor Placement for Diver Detection*, Operations Research, 2012
- Michael Zabaranin, Anton Molyboha, *3D Shape Optimization in Viscous Incompressible Fluid under Oseen Approximation*, SIAM Journal on Control and Optimization, 2011
- Bogdan Grechuk, Anton Molyboha, Michael Zabaranin, *Mean-Deviation Analysis in the Theory of Choice*, Risk Analysis, 2011
- Anton Molyboha, Michael Zabaranin, *Optimization of Steerable Sensor Network for Threat Detection*, Naval Research Logistics, 2011
- Bogdan Grechuk, Anton Molyboha, Michael Zabaranin, *Cooperative Games with General Deviation Measures*, Mathematical Finance, **23**, 2011
- Bogdan Grechuk, Anton Molyboha, Michael Zabaranin, *Chebyshev Inequalities with Law-Invariant Deviation Measures*, Probability in The Engineering and Informational Sciences, **24**, 2010
- Michael Zabaranin, Anton Molyboha, *Three-Dimensional Shape Optimization in Stokes Flow Problems*, SIAM Journal on Applied Mathematics, **70**, 2010
- Bogdan Grechuk, Anton Molyboha, Michael Zabaranin, *Maximum Entropy Principle with General Deviation Measures*, Mathematics of Operations Research, **34**, 2009
- Sergei Pashko, Anton Molyboha, Michael Zabaranin, Sergei Gorovyy, *Optimal sensor placement for underwater threat detection*, Naval Research Logistics, **55**, 2008

Interests

- **Ballroom dancing**