

# Jason Bohne

College of Engineering and Applied Sciences · Stony Brook University, Stony Brook, NY, 11794  
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## Education

### Stony Brook University

Stony Brook, NY

#### PH.D. IN APPLIED MATHEMATICS AND STATISTICS

August 2021 - present

- Affiliated with the Quantitative Finance Group
- Advisor: Prof. Pawel Polak, Dept. of Applied Mathematics and Statistics

#### M.SC. IN APPLIED MATHEMATICS AND STATISTICS

August 2021 - December 2022

- Quantitative Finance Track: GPA: 3.9/4.0
- Concentration in Statistical Learning, Nonparametric Regression, Optimization

### University of Illinois at Chicago

Chicago, IL

#### B.SC. IN MATHEMATICS

August 2018 - May 2021

- Honors College Graduate, GPA: 4.0/4.0
- Thesis: An Analysis of Derivative Pricing Methods
- Advisor: Prof. Jie Yang, Dept. of Mathematics
- Concentration in Linear Algebra, Numerical Analysis, Differential Equations

## Professional Experience

### Bloomberg Technology

New York City, NY

#### CTO OFFICE INTERN (INCOMING)

May 2023 - August 2023

- Applied statistical models for trend estimation and regime detection.

### Proprietary Trading Firm

New York City, NY

#### QUANTITATIVE RESEARCHER

December 2021 - August 2022

- Developed learning pipelines for data processing and feature generation.
- Constructed derivatives pricing and risk management engine for inventory risk.
- Modeled short-term trend and volatility to determine quoting policies.

### Alpaca Securities

San Francisco, CA

#### CONTENT RESEARCH

July 2020 - July 2021

- Created API tutorials on algorithmic trading and market data.
- Hosted community events that attracted over 250 attendees.

## Publications

### WORKING PAPERS

Adaptive Trend Filtering in the Presence of Exogenous Covariates. **Jason Bohne**, Pawel Polak. 2023

### TECHNICAL REPORTS

Statistical Inference of Hidden Markov Models on High-Frequency Quote Data. **Jason Bohne** 2022.

Multiple Kernel Learning on the Limit Order Book. **Jason Bohne**, Jarryd Sculley, Paul Vespe. 2022

Mean-Variance Optimization using Elastic Net Penalty. **Jason Bohne**, Jarryd Sculley. 2022

## Presentations

**Jason Bohne**, 2022. Statistical Inference of Hidden Markov Models on High-Frequency Quote Data. Applied Mathematics and Statistics Department, Stony Brook University

**Jason Bohne**, Jarryd Sculley, Paul Vespe. 2022. Multiple Kernel Learning on the Limit Order Book. Applied Mathematics and Statistics Department, Stony Brook University

**Jason Bohne**, Jarryd Sculley. 2022. Mean-Variance Optimization using Elastic Net Penalty. Applied Mathematics and Statistics Department, Stony Brook University

**Jason Bohne**. 2021. An Analysis of Derivative Pricing Methods. Honor's College Research and Impact Conference, University of Illinois at Chicago.

## Research Experience

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### High-Frequency Research Group at Stony Brook University

*Stony Brook, NY*

ADVISOR: PROF. PAWEŁ POLAK

*2022 - Present*

- Developed the infrastructure for a high-frequency trade and quote database of over 50 TB for the department.
- Implemented automatic machine learning pipelines for data preprocessing, feature generation, and model training.

### Polymath Summer REU at Yale University

*New Haven, CT*

ADVISOR: PROF. PAT DEVLIN

*2020*

- Computed the hat guessing number for distinct classes of cyclic graphs.
- Provided bounds on the hat guessing number for complete graphs.

## Teaching Experience

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- 2023 **Capital Markets and Portfolio Theory**, Lead Teaching Assistant
- 2022 **Foundation of Quantitative Finance**, Lead Teaching Assistant
- 2022 **Applied Mathematics in Modern Technology**, Lead Teaching Assistant
- 2021 **Applied Mathematics in Modern Technology**, Lead Teaching Assistant

## Honors and Awards

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- 2020 **Victor Twersky Mathematics Scholarship**, University of Illinois at Chicago
- 2020 **Yeuk-Lam Yau-Leung Memorial Scholarship**, University of Illinois at Chicago

## Outreach & Professional Development

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### AFFILIATIONS AND SERVICE

- 2023 **Institute for Advanced Computational Science**, Research Affiliation
- 2023 **Curriculum Vitae and Academic Website Tips by SIAM**, Event Lead
- 2023 **COMAP MCM/ICM Challenge**, Undergraduate Team Advisor
- 2023 **SIAM Stony Brook Chapter**, Technical Lead and Board Member
- 2018 - 2021 **Quantitative Trading Club**, Cofounder and President

### COMPETITIONS

- 2021 **Traders at MIT**, Student Team for University of Illinois at Chicago
- 2021 **Berkley Trading Competition**, Student Team for University of Illinois at Chicago
- 2021 **COMAP's Mathematical Modeling Challenge**, Successful Participant

### SKILLS

#### Programming Languages

PYTHON, R, BASH

#### Technical Libraries

SCIKIT-LEARN, SCIPY, NUMPY, DASK, PYTORCH, KERAS

#### Developer Tools

GIT, DOCKER, KUBERNETES, MLFLOW, SQL, DJANGO, REST APIS