# Aric Cutuli

School of Engineering and Applied Sciences · Columbia University

*New York, NY 10027*

ajcutuli@gmail.com | ajcutuli.github.io | ajcutuli | ajcutuli

## Education

**Columbia University** *New York, NY*

MS Financial Engineering *Sep 2022 - Dec 2023*

- GPA: 3.7/4.0
- Concentration in Machine Learning

**University of California, Los Angeles** *Los Angeles, CA*

BS Mathematics/Economics *Sep 2019 - Jun 2022*

- GPA: 3.9/4.0
- Specialization in Computing

## Research Experience

**Columbia Climate School** *New York, NY*

Advisor: Prof. Upmanu Lall & Dr. Michael Puma *Feb 2023 - Present*

- Bayesian hierarchical regression and machine learning to develop improved models of human migration flows

## Professional Experience

**Citigroup** *New York, NY*

Quantitative Summer Analyst - Equities Central Risk *Jun 2023 - Aug 2023*

- Systematic order filtering using sentiment

**Citigroup** *New York, NY*

Quantitative Summer Analyst - AI Innovation Lab *Jun 2022 - Aug 2022*

- Language model fine-tuning for news data classification

**Consulting Startup** *Remote*

Quantitative Developer *Dec 2021 - May 2022*

- Created derivative pricing and risk management tools for trading bots

**Edelman Financial Engines** *Santa Clara, CA*

Data Analyst Intern *Jun 2021 - Aug 2021*

- Identification of fiduciary performance issues through statistical testing

## Publications

### In Prep

A Bayesian Hierarchical Framework for Modeling Migration Flows. **Aric Cutuli**, Upmanu Lall, Michael Puma, Emile Esmaili, Rachata Muneepeerakul. 2023.

### Technical Reports

Separation Capacity of Randomly Initialized DNNs. **Aric Cutuli**, Harold Haodong Miao, Weitao Zhu. 2023.

## Invited Talks

** presenting contributor*

**Aric Cutuli***, Upmanu Lall, Michael Puma, Emile Esmaili, Rachata Muneepeerakul. 2023. A Bayesian Hierarchical Framework for Modeling Migration Flows. MURI Migration 2023 Annual Evaluation, Virtual.

**Aric Cutuli***, Xia Li. 2022. Hawkes Processes in Finance. Directed Reading Program Student Colloquium, University of California, Los Angeles.

## Teaching Experience

2023 **Algorithmic Trading**, Lead Teaching Assistant

## Awards, Fellowships, & Grants

| | | |
|---|---|---|
| 2019 | **University Grant**, University of California, Los Angeles | *$ 45,000* |
| | **Legacy Scholar**, Elks National Foundation | *$ 4,000* |
| | **IAHF Scholar**, Italian American Heritage Foundation | *$ 1,000* |
| | **Most Valuable Student**, California-Hawaii Elks Association | *$ 200* |

## Coursework & Skills

### Coursework

Stochastic Calculus, Time Series, Optimization, Monte Carlo Simulations, Reinforcement Learning, Mathematics of Deep Learning, High Dimensional Machine Learning, Algorithms, Object-oriented Programming, Trading Systems, Quantitative Risk Management, Econometrics, Real Analysis, Numerical Analysis

### Skills

#### Programming Languages

Python, C++, Java, Go

#### Technical Libraries

scikit-learn, NumPy, NumPyro, Keras, PyTorch, Hugging Face, statsmodels, CVXPy

#### Developer Tools

q/kdb+, SQL, Git, Docker

## Outreach & Professional Development

### Affiliations and Service

2021-2022 **UCLA Quantitative Trading Club**, Cofounder

2021 **UCLA Directed Reading Program**, Reading Group Lead

### Professional Memberships

QWAFAxNEW