Aric Cululi

School of Engineering and Applied Sciences · Columbia University
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Education

Columbia University — *New York, NY*
M.S. Financial Engineering — *Sep 2022 – Dec 2023*

University of California, Los Angeles — *Los Angeles, CA*
B.S. Mathematics/Economics, Specialization in Computing — *Sep 2019 – Jun 2022*

Research Experience

Columbia University — *New York, NY*
Research Assistant, *Center for Climate Systems Research* — *Feb 2023 – Present*
Supervisors: Prof. Upmanu Lall, Dr. Michael Puma

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

AbleMarkets — *Remote*
Research Assistant — *Dec 2021 – Mar 2022*

- Developed internal whitepaper surveying the microstructure of decentralized exchanges

Professional Experience

Citigroup — *New York, NY*
Quantitative Summer Analyst, *Equities Central Risk* — *Jun 2023 – Aug 2023*

- Systematic order filtering using sentiment

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, *Fiduciary Quality Assurance* — *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.

Modeling Migration Flows with Non-Homogeneous Hidden Markov Models. Emile Esmaili, Upmanu Lall, Michael Puma, **Aric Cutuli**, 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

Teaching Assistant

- IEOR 4733 - Algorithmic Trading, *Spring 2023*

Awards, Fellowships, & Grants

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 Scholar, *CA-Hawaii Elks Association*	*$ 200*

Professional Memberships

QWAFAxNEW
American Geophysical Union

Affiliations

UCLA Directed Reading Program, *Reading Group Lead*
UCLA Bruin Capital Management, *Co-founder of quant division*

Coursework

Mathematics — Stochastic Calculus, Optimization, Mathematics of Deep Learning, Linear Algebra, Real Analysis, Numerical Analysis, Stochastic Processes

Statistics — Time Series, Monte Carlo Simulations, Statistical Inference, Econometrics

Computer Science — Reinforcement Learning, Machine Learning & High-Dimensional Data, Algorithms, Object-oriented Programming, Trading Systems

Skills

Programming Languages — Python, C++, Java, Go

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

Developer Tools — q/kdb+, SQL