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Math PhD. specializing in quantitative analytics and machine learning. Seeking full-time positions starting Summer 2024

Summary

Versatile quant trader and data scientist with a with a strong foundation in statistical modeling, machine learning, deep learning, and experience in delivering data-driven insights. Backed by excellent problem-solving skills, an enriching stint at The Bee Corp, and teaching experience spanning decades, primed for innovative roles in algorithmic trading, quant finance, data science, and fintech.

Education

Ph. D. in Mathematics | University of Illinois at Chicago | **May 2024** | specialization: *algebraic geometry and commutative algebra*

- GPA: 4.00/4.00, completed courses in Theoretical Computer Science
- 3 publications in top-tier journals – 2 x math (Trans. and Proc. AMS), 1 x Public Health (Covid-19 excess death estimates)
- References: Kevin Tucker (thesis advisor, teaching), Lev Reyzin (professor of Computer Science)
- Selected for and undertook **Akuna Capital Options 201** course

BSc (Hons.) in Math & CS | Chennai Mathematical Institute | June 2018

Work and Analytics Experience

Data Science Intern | The Bee Corp | Summer 2022

- **Collaborated** with **research, data scientists**, brainstormed effective uses of existing **ML algorithms** on infrared images to efficiently gauge quality of beehives, done prior using tedious manual inspection.
- **Improved** *hive strength detection of traditional clustering algorithms* **by 30%**. Key **novel** idea was to use **mathematical functions** to **enhance** application of classical clustering algorithms.
- **Conceptualized** implementations of **decision trees, time series analysis, forward feature selection** on **~500GB dataset**

INMAS program | University of Illinois at Urbana-Champaign | 2021-22

- Involved in crash courses on **Python Coding, Statistical Methods, Machine Learning, Professional Development**.
 - Capstone project analyzed the **IMDB movies database**. Found meaningful patterns in noisy data, implemented **logistic regression** to detect **genre** of a movie using **plot summary**, algorithm giving an **accuracy of over 75%** for most genres.
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Teaching Experience

Teaching Assistant | University of Illinois at Chicago | 2018 – 2024

- Lead problem-based discussion sessions and instructor for **6 years** and over **1000 students** with glowing instructor reviews and student feedback. Emphasized **collaboration** in classrooms. *Instructor of record* for one summer. **Developed strong communication skills** and Underwent **TA training** with an emphasis on equitable mindset.
- TAed for **Calculus I, II, Statistics, Differential Equations, Python programming**

Senior Counselor | Ross Mathematics Program USA and China | 2015, 17, 18

- Mentored **50** individual talented **high school students** from the **U.S. and China**. Designed **problem sets** and mini courses on **number theory** and **combinatorics**. Organized activities, social events.
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Computing Skills:

Python, Numpy, Pandas, Pytorch, Backtesting, Tensorflow, C++, SQL, Excel, GitHub, AWS, Linux, XGBoost

Soft Skills:

Teamwork, Communication, Leadership, Teaching, Problem Solving, Research, Mentoring, Market Data

Selected Honors

- Received and waitlisted for selective academic postdoctoral fellowships
- Invited seminar talks at many universities and conferences (U. Alabama, IIT Bombay, TIFR), conference talks (AMS Special Sessions Omaha, Georgia Tech), JMM 2024 (San Francisco), UW Seattle, UNT Denton, UN Nebraska.
- Intl. Cong. of Mathematicians (ICM 2022) Kovalevskaya award from AMS-Simons foundation