

Zsolt Pajor-Gyulai

Mathematician, Data Scientist, Machine Learning Engineer
Permanent Resident of the United States

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[Website](#); [Github](#); [Arxiv](#), [Google Scholar](#)

Professional experience

Cruise LLC - Autonomous Vehicles

Staff Data Scientist/ Machine Learning Engineer, ML Data Shop, AI Search

July 2024 – Present

Technical lead for 6 people developing robust search tools that combine embedding based vector search using internal/external multimodal foundational models with handcrafted attribute based mining approaches to discover long tail, low coverage AV data.

Staff Data Scientist, AV Performance Evaluation Data Science

September 2023 – July 2024

Technical leadership for the organization. Strategic direction setting, mentorship, and cross functional alignment for an organization of 20 scientists/engineers evaluating AV performance on road and in simulation.

- Developed ML based Safety Metrics strategy and drove strategic alignment of the related metric ecosystem. Initiated and prototyped a monitoring system based on first principle leading indicators of risky behavior.
- Received equivalent of Exceeds Expectations rating.

Senior Data Scientist II, Data Science

January 2022 – September 2023

Developed an end to end ML system running live on the autonomy stack for collision risk detection without reliance on the signal from a safety driver.

- Prototyped, designed, built and launched the initial product on the autonomy stack from scratch (C++).
- Led a team of 4 scientists/engineers to improve the model's lift by a factor of ~8-10x and to build out several analytics capabilities serving the customer.
- Received Exceeds Expectation rating.

The Voleon Group - Quantitative Finance

Member of Research Staff I & II

September 2018 – January 2022

Developed end to end systematic trading systems powered by robust live data pipelines, cutting edge AI for alpha generation, and optimized data driven portfolio planning with state of the art risk management. Deep involvement in engineering and productization components.

- 2+ years developing and maintaining a multibillion dollar market neutral stratarb strategy in the Asia-Pacific and European Equity space.
- 1 yr developing a US Futures strategy starting with a global macro flavor later pivoting to a market neutral stratarb strategy.
- Technical lead for 2+ years, promoted in 2019.

CIMS, New York University - Academia

Assistant Professor/Courant Instructor

September 2015 – June 2018

Studied the long time behavior of diffusions along heteroclinic networks - dynamical systems with collections of hyperbolic saddle points and connecting heteroclinic orbits.

- Published 5 scientific articles (13 total) at high prestige journals (see arxiv page) including a 140+ page magnum opus establishing the presence of polynomial time-scale metastability for such systems.

Education

2015 June Ph.D. in Mathematics (Probability) University of Maryland College Park

2010 June B.Sc. and M.Sc. in Physics Budapest University of Technology and Economics

Technical expertise

Academic Principles	Pure and Applied Mathematics, Statistics, Machine Learning, Deep Learning
Frameworks and libraries	(Python) Numpy, Pandas, Scikit-Learn, XGBoost, Pytorch; (R) data.table, tidyverse; (Cloud) Google Cloud (GCP), DBT; (C++) ROS