Angela Zhao

azhaowork@gmail.com | (667)464-5025
ang-zhao.github.io/home*

EDUCATION

PhD in Biostatistics
Johns Hopkins University – Gertrude M. Cox Scholarship (American Statistics Association); GPA: 4.0/4.0 Expected May 2028

ScM in Biostatistics
Johns Hopkins University – Student Rep; Curriculum Committee; GPA: 3.94/4.0 May 2024

BSc in Joint Honors Computer Science & Biology
McGill University – Math Minor, First Class Honors, Dean's Multidisciplinary Research List; NSERC USRA; GPA: 3.97/4.0 Oct. 2022

SUMMARY

(*FULL CV ONLINE)

5 peer-reviewed articles | 6 leadership positions | 11 talks and posters | 9 awards and honors

EXPERIENCE

British Columbia Investment Management Corp. | *Incoming Quant Equity Intern* May. 2026
Johns Hopkins University | *PhD Candidate* Sep. 2024 - Present

- Developing dynamic functional autoencoders and time-series models for high-frequency ABP waveforms during surgery.
- Engineered a global basis to model locally stationary data with regime shifts and irregular sampling ($n_{obs} \approx 2$ billion)
- Demonstrated effective applications in outlier detection, digital twin simulation, and prediction of physiological outcomes.
- Built scalable R/Python pipelines on HPC clusters for streaming and processing irregular, massive datasets and text data.

Emerald Advisors, LLC | *Research Analyst Intern* May 2024 - Aug. 2024

- Assisted senior analysts in covering 20+ biotech/therapeutics companies at a long-only firm managing ∼$5B of AUM.
- Evaluated scientific literature, clinical trial data, and business filings as part of the due diligence process for new ideas.
- Contributed to the BUY decision on [redacted]; stock went up 50+% and made a positive 8bps impact to the portfolio.
- Conducted due diligence for the IPO of [redacted], including constructing comps tables and reviewing SEC-1 filings.

Johns Hopkins University | *Masters Research Assistant* Sep. 2022 - Present

- Developped inference procedures for functional cox models that consider the inherent correlation of timeseries data.
- Demonstrated that wearable device metrics improve the risk prediction of traditional survival models by up to 10%.
- Leveraged Pytorch to systematically compare RNNs, transformers, and AR models to encode/decode complex fMRI dynamics.
- Proposed that the potency of transformers suggest a form of neural context that challenges standard fMRI assumptions.
- Produced 5 peer-reviewed papers, 1 under revision, and R pipelines on HPC to clean and process $N > 1M$, $p > 10K$ data.

McGill University | *Research Assistant for Dr. Jackie Vogel* Jan. 2020 - Aug. 2022

- Developed shape analysis pipelines in Java and Python to identify droplet-like behaviours in proteins from video data.
- Leveraged ML for artifact removal and signal processing; weighted-mean/Gaussian approaches for subpixel positioning.
- Contributed to single-cell analysis software for super-resolution image data that lead to 1 paper, 8+ talks/posters/abstracts.

SKILLS

Languages	Python, R, Java, C, Bash, SAS, SQL
Software	PyTorch, HPC cluster, GPU (cuda), AWS, Git, Huggingface, dashboarding, image processing, Factset
Theory	Probability, statistics, time-series, Bayesian inference, survival analysis, causal inference, deep learning, NLP, object-oriented programming, algorithms and data structures, equity research, quantitative/risk modelling

PERSONAL PROJECTS

Geometry-Aware Evolutionary LLMs for Developing Inference Procedures
- Investigating genetic algorithms that utilize LLMs as mutation operators to solve non-differentiable optimization tasks.

Adaptive Trading Dashboard
- Built Streamlit simulation engine to stress-test CUSUM changepoint detectors with GARCH pre-whitening and rolling resets.
- Quantified false-alarm trade-offs via Monte Carlo; backtests revealed outperformance in trending markets vs. bear regimes.

Firehouse Call Forecasts
- Built ensemble models to predict call volume probabilities, in collaboration with the Owings Mills Volunteer Firehouse.

SELECT PUBLICATIONS

1. Lindquist M A, Smith B B, Kannan A, **Zhao A**, Caffo B (2025). Measuring the Functioning Human Brain. *Annual Review of Statistics and its Application,*. https://doi.org/10.1146/annurev-statistics-040522-100329

2. **Zhao A**, Cui E, Leroux A, Lindquist M, Crainiceanu C (2023). Evaluating the prediction performance of objective physical activity measures for incident Parkinson's disease in the UK Biobank. *Journal of Neurology,* 270(12), 5913–5923. https://doi.org/10.1007/s00415-023-11939-0