Taj Jones-McCormick

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Summary

PhD student in Statistics at the University of Waterloo with research focused on probabilistic methods for deep learning (and vice versa). Interested in both theory and application with experience in applying state-of-the-art machine learning techniques within academic and industry settings.

Experience

Arteria AI   *NLP Data Scientist*
2022 – 2023

  – Created solutions to real-world client problems using state-of-the-art deep learning models.

  – Trained production-grade NLP and computer vision models used in end-to-end products.

  – Collaborated with a team of data scientists to brainstorm, execute, and present solutions.

Arteria AI   *Data Science Research Intern*
May 2022 – August 2022

  – Experimented with state-of-the-art object detection models for document understanding.

  – Trained an object detection model that increased recall over previous approaches by more than 30% (while maintaining precision).

  – Gained familiarity with cutting-edge object detection literature.

University of Guelph   *Research Assistant*
Summer 2020 & 2021

  – Developed econometric models and conducted data cleaning and exploratory data analysis in Python and R.

  – Performed healthcare-taxation simulations.

  – Conducted literature reviews

Education

University of Waterloo   *PhD, Statistics*
2023 – Present

  – Supervised by Professors Aukosh Jagannath and Liqun Diao.

  – Research Interests: Deep Learning, Probabilistic Methods for Deep Learning.

University of Waterloo   *Master of Mathematics, Statistics*
September 2021 – August 2022

  – Supervised by Professor Liqun Diao.

University of Guelph   *Bachelor of Commerce, Economics and Finance*
2017 – 2021

  – Varsity Track and Field (2017–2018), Top-ranked team in Canada.

Publications

T. Jones-McCormick, A. Jagannath, and S. Sen. "Provable Benefits of Unsupervised Pre-training and Transfer Learning via Single-Index Models." *arXiv preprint arXiv:2502.16849* (2025). Accepted at ICML 2025 (Spotlight Poster).

Scholarships and Awards

– Russell Hiscock Graduate Scholarship (PhD Student)

– Special Graduate Student Entrance Award (PhD Student)

– John Kenneth Galbraith Scholarship in Economics – awarded to the student with the highest average after 5 to 6 semesters (Undergraduate)

Technical Skills

Languages: Python, R
Libraries/Frameworks: NumPy, PyTorch, TensorFlow, scikit-learn, HuggingFace Transformers, Pandas
Concepts: Probabilistic Methods, Deep Learning, NLP, Computer Vision