Varnan Sarangian

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Curriculum Vitae

Education

Doctor of Philosophy (PhD) in Statistics — 05/2024 — *present*
University of Waterloo, Canada

Masters of Mathematics (MMath) in Statistics — 09/2021 — 05/2023
University of Waterloo, Canada

Bachelor of Computer Science (BCS) in Honours Data Science — 09/2015 — 12/2020
University of Waterloo, Canada
Note: Co-operative program, graduated with ***Dean's Honours***

Publications and Preprints

Note: The following adopt alphabetical authorship unless starred.

1. Jagannath, A., and Sarangian, V., 2026. High-dimensional limit theorems for adaptive variants of SGD I: Ballistic limits. *arXiv:2611.19059*.
2. Jagannath, A., Jones-McCormick, T. and Sarangian, V., 2025. High-dimensional limit theorems for SGD: Momentum and Adaptive Step-sizes. *arXiv:2511.03952*. International Conference on Learning Representations 14 (ICLR 2026)

Awards, Funding, and Recognition

Graduate Research Studentship (GRS) — *ongoing*

President's Graduate Scholarship (PGS) — 2026—

Ontario Graduate Scholarship (OGS) — 2026—

University of Waterloo Statistics and Actuarial Science — Chair's Award — 2025
Teaching Assistant of the Year Award

University of Waterloo Statistics and Actuarial Science — Chair's Award — 2022, 2024, 2025
Teaching Assistant Award (x3)

University of Waterloo Statistics and Actuarial Science — Comprehensive Exam Award — 09/2024

University of Waterloo Statistics and Actuarial Science — MMath Entrance Award — 09/2021

University of Waterloo President's Research Award — 09/2016

University of Waterloo President's Scholarship of Distinction 09/2015

Invited Talks and Presentations

Statistical Society of Canada (SSC) - Annual Meeting 06/2026
McMaster University - Hamilton, Ontario
Talk: "High-Dimensional Limit Theorems for Stochastic Gradient Descent"

High-Dimensional Learning Dynamics (26w5565) 02/2026
Banff International Research Station (BIRS, Banff)
Talk: "High-dimensional limit theorems for SGD: Momentum and Adaptive Step-sizes"

Southern Ontario Learning Theory (SOLT 3rd Edition) Workshop 11/2025
University of Waterloo
Poster: "High-dimensional limit theorems for SGD: Momentum and Adaptive Step-sizes"

Teaching Experience

Graduate Teaching Assistant 09/2021 — 04/2023; 05/2024 — *present*
University of Waterloo
Courses: High-Dimensional Probability *(Graduate)*, Measure-theoretic Probability *(Graduate)*, Deep Learning *(Graduate)*, Computational Inference *(Graduate)*, Advanced Regression *(Graduate)*, Stochastic Processes *(Undergraduate)*, Mathematical Statistics *(Undergraduate)*

Undergraduate Teaching Assistant 09/2016 — 12/2020
University of Waterloo
Role: Undergraduate Residence Tutor for Calculus 1, 2

Industrial Placements

NLP Data Scientist 02/2021 — 08/2021
Arteria A.I.

Data Science Intern 05/2019 — 12/2019
Thomson Reuters Labs

Data Scientist 09/2018 — 12/2018
KPMG Canada

R&D Developer 01/2018 — 04/2018
International Financial Data Services (IFDS)

IT Solutions Developer 05/2017 — 08/2017
TD Bank Group Canada

Professional Activities and Service

ICML 2026: High-Dimensional Learning Dynamics Workshop 2026
Reviewer

Other Academic Activities

High-dimensional Probability and its Applications 08/2026
Summer School - Northwestern University
Teaching Assistant

Statistical Mechanics of Spin Glasses, Neural Networks, and Learning 06/2025
Summer School - Hausdorff School for Mathematics (Universitat Bonn)
Invited Participant