Parsa Rangriz

Contact Information

Department of Statistics and Actuarial Science,
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Education

University of Waterloo
M.Math. in Statistics (Sep 2023 - Apr 2025)

- Advisor: Prof. Aukosh Jagannath
- GPA: 92.25/100

Sharif University of Technology (Tehran, Iran)
B.Sc. in Physics (Sep 2018 - Feb 2023)

- GPA: 18.34/20
- Minor in Mathematics

Research Experiences

Graduate Research Student, University of Waterloo (Sep 2023 - Apr 2025)

- Supervisor: Prof. Aukosh Jagannath
- Thesis: *Scaling limits of stochastic gradient descent for the single index models in the teacher-student network*

Undergraduate Student, Sharif University of Technology (Oct 2021 - Apr 2023)

- Supervisor: Prof. Saman Moghimi and Prof. Abolfazl Ramezanpour
- Project: *Loop corrections for hard spheres in Hamming space*
- Journal: arXiv:2409.03670 [cond-mat.dis-nn]

Research Intern at SPOC Lab, EPFL (July 2022 - Sep 2022)

- Supervisor: Prof. Lenka Zdeborova
- Project: *Assortative partitions on dense random graphs.*

Undergraduate Student, Sharif University of Technology (June 2021 - Sep 2021)

- Supervisor: Prof. Amir Daneshgar
- Project: *Belief propagation of graph bi-partitioning.*

Remote Research Intern, University of Manchester (Feb 2021 - Jun 2021)

- Supervisor: Dr. Ahsan Nazir and Dr. Adam Stokes
- Project: *Non-conjugate quantum subsystems*
- Journal: Phys. Rev. E 106, 034111 (2022)

Undergraduate Student, Sharif University of Technology (Feb 2021 - Jun 2021)

- Supervisor: Prof. Abolhassan Vaezi and Prof. Sadegh Raeisi
- Project: *Phase Transitions in the Transverse-Field Ising Model*
- Reference: Report + Github

Honors and Awards

University of Waterloo Graduate Scholarship, 2025
Received a scholarship of 1,000 CAD for the master's program.

Graduate Research Studentship, **University of Waterloo**, 2023-2025
Received a scholarship of 36,473 CAD for the master's program.

International Master's Award of Excellence, **University of Waterloo**, 2023
Received an award of 5,000 CAD for the master's program.

Master of Mathematics Entrance Scholarship, **University of Waterloo**, 2023

Received an award of 1,000 CAD for the master's program.

Summer@EPFL Fellowship, EPFL, 2022
Ranked top 1.5% among 4,000 applicants and awarded a 4,800 CHF fellowship.

Ranked 5th in the 26th Iran University Physics Olympiad 2021
Held by National Organization for Educational Testing (SANJESH)

Silver Medal in the 30th Iran National Physics Olympiad, 2017
Held by National Organization for Development of Exceptional Talents (SAMPAD)

Summer Schools

CRM-PIMS Summer School in Probability 2024
Centre de Recherches Mathematiques, Universite de Montreal, Canada

Summer@EPFL 2022
Ecole Polytechnique Federale de Lausanne, Switzerland

Quantum Thermodynamics Summer School 2021
ETH Zurich, Switzerland

Teaching Experiences

Teaching Assistant, University of Waterloo (2023-2025)

- STAT 333: Stochastic Processes 1 (Winter 2025, Winter 2024)
- STAT 833: Stochastic Processes 2 (Fall 2024)
- STAT 330: Mathematical Statistics (Spring 2024, Fall 2023)
- STAT 231: Probability (Spring 2024)
- STAT 230: Statistics (Spring 2024)
- STAT 202: Introductory Statistics for Scientists (Fall 2023)

Teaching Assistant, Sharif University of Technology (2019-2022)

- Advanced Statistical Mechanics (Fall 2022, Fall 2021, Spring 2021)
- Thermodynamics and Statistical Mechanics 2 (Spring 2021)
- Thermodynamics and Statistical Mechanics 1 (Fall 2020)
- General Physics III (Fall 2019)
- Fundamentals of C Programming (Spring 2019)

Selected Courses

University of Waterloo (2023-2024)

- STAT 946: Topics in Statistics (Math foundations of deep learning)
- STAT 902: Theory of Probability 2 (Stochastic calculus and Brownian motion)
- STAT 891: Topics in Probability (Random matrices and high-dimensional stats)
- STAT 908: Statistical Inference
- STAT 901: Theory of Probability 1 (Probability theory)
- AMATH 731: Applied Functional Analysis

Sharif University of Technology (2018-2023)

- Advanced Theory of Statistics
- Information-Theoretic Methods in High Dimensional Statistics
- Graphical Models, Variational Inferences, and Entropy Maximization
- Advanced Statistical Physics
- Machine Learning in Physics

Skills

Programming Skills and Tools

- Experienced in C and Python
- Familiar with Scikit-learn, Keras, and TensorFlow libraries.
- Experienced in Wolfram Mathematica and LaTeX.

Languages

- English (Advanced) - TOEFL iBT: 100/120 (Sep 2024)
- Turkish (Fluent)
- Azerbaijani (Native)
- Persian (Native)