Gunbir Singh Baveja

gbaveja@student.ubc.ca
https://github.com/sheeerio
Vancouver, BC

Education

2022–26 **B.Sc.**, Computer Science, University of British Columbia
GPA: 3.95/4.0

Research Experience

2025– Undergraduate Researcher, University of British Columbia (WLIURA)
Advisor: Prof. Mark Schmidt

2024 Visiting Student Researcher, KAIST
Advisor: Prof. Joseph J. Lim

2023 Research Intern, Delhi Technological University
Advisor: Dr. Indu Singh

Publications

Google Scholar

Peer-reviewed Conference Proceedings

C1. Baveja, G. S., Schmidt, M. & Lewandowski, A. *A Unified Noise-Curvature View of Loss of Trainability* in *NeurIPS Optimization for Machine Learning Workshop (OPT)* (2025).

Working papers

W1. Baveja*, G. S. *Exploration and Adaptation in Non-Stationary Tasks with Diffusion Policies* arXiv (CoRR). 2024.

W2. Singh, I., Baveja*, G. S., Khatri, S., Luthra, S. & Singh, T. *Iris and Palmprint Multimodal Biometric Recognition using Novel Preactivated Inverted ResNet and Hybrid Metaheuristic Optimized DenseNet* under review at IEEE Transactions on Computational Social Systems. 2024.

W3. Baveja*, G. S. & Singh, J. *Earthquake Magnitude and b value prediction model using Extreme Learning Machine* arXiv (CoRR). 2021.

Academic Blogs

B1. Baveja, G. S. *On Effective Communication* Requietis (Blog). A reflective exploration of balancing precision, compression, and practicality. Feb. 2025. https://sheeerio.github.io/requietis/2025/02/comm/.

B2. Baveja, G. S. *The Illusion of Choice: Simulated Learning and Belief in AI* Requietis (Blog). Learning and adaptability in LLMs. Mar. 2025. https://sheeerio.github.io/requietis/2025/03/will/.

B3. Baveja, G. S. *The Hidden Bias in Scientific Objectivity* Requietis (Blog). Exploring how inherent biases influence scientific research. Mar. 2023. https://sheeerio.github.io/requietis/2023/03/learn-acc/.

B4. Baveja, G. S. *Understanding Bias in RL* Requietis (Blog). Understanding Bias-Variance Tradeoff in RL through Stein's Paradox. Sept. 2023. https://sheeerio.github.io/requietis/2023/09/bias/.

Awards & Honors

2025	WLIURA (NSERC) ($6,000)
2025	Undergraduate Research Award: AML-TN ($5,000)
2025	Outstanding International Student Award ($10,000)
2023	Dean's List (2023, 2024, 2025)
2023	Top 10 Leaderboard, NeurIPS Concordia Challenge
2022	International Work Terms Grant ($1,000)
2022	Bronze Medal - National Rank 8, Asia Pacific Linguistics Olympiad
2021	Finalist, Intel Science and Engineering Fair
2020	Grand Award, IRIS National Fair
2020	Second Award, Global Youth Science and Technology Bowl

Teaching

University of British Columbia

2025–Present	Undergraduate Teaching Assistant, CPSC 340: Machine Learning and Data Mining

Projects & Tools

Open Source & Projects

GOL: Fully parallelized Game of Life.

SchizoSpeak: An esolang created for schizophrenic programmers using TypeScript.

Alokhe: An english pronunciation discord bot.

better_rl: A deep RL experimentation tool providing insights into state-visitation, replay buffers, and policy analysis.

Biologically Plausible Supervised Learning with MAP Inference: Revising existing code from Map-prop to JAX and scaling up to deeper networks, with supervision from Stephen Chung.

Continual Diffusion: Diffusion models for RL in non-stationary tasks.

Presentations

Talks

T1. Baveja, G. S. *Efficient Policy Updates in Continual Reinforcement Learning Frameworks* KAIST Cognitive Learning for Vision and Robotics Group. 2024.

T2. Baveja, G. S. *Scalable Unsupervised RL with Metric-Aware Abstraction* KAIST Reinforcement Learning Reading Group. June 2024.

Other Experience

2020	Machine Learning Intern, Bausch + Lomb
2023	Software Team Lead, Open Robotics

Last updated: November 23, 2025