Gunbir Singh Baveja

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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

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

Awards & Honors

Year	Pool	Award
2025	*north-america*	CRA Outstanding Undergraduate Researcher Award Honorable Mention (Faculty nominated)
2025	*university-wide*	Faculty of Science International Student Scholarship ($9,000, Faculty nominated)
2025	*national*	Undergraduate Student Research Award (NSERC) ($6,000)
2025	*department-wide*	Undergraduate Research Award: AML-TN ($5,000)
2024	*faculty-wide*	International Work Terms Grant ($1,000)
2023	*faculty-wide*	Dean's List (2023, 2024, 2025)
2022	*international*	Outstanding International Student Award ($10,000)
2022	*international*	Bronze Medal - National Rank 8, Asia Pacific Linguistics Olympiad
2021	*international*	Wolfram Award, Intel Science and Engineering Fair
2020	*National*	Grand Award, IRIS National Fair

Teaching

University of British Columbia

Jan 2026–Present	Undergraduate Teaching Assistant, CPSC 320: Intermediate Algorithm Design and Analysis
Sept 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. `https://www.students.cs.ubc.ca/~gbaveja/data/MA_CL_CRL.pdf`.

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: December 18, 2025