

# Gunbir Singh Baveja

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<https://github.com/sheerio>

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* (Blog). A reflective exploration of balancing precision, compression, and practicality. Feb. 2025. <https://sheerio.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://sheerio.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://sheerio.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://sheerio.github.io/requietis/2023/09/bias/>.

## Awards & Honors

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

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Last updated: December 2, 2025