Gursimar Singh

+1 437 772 3703 | gursimar.singh@mail.utoronto.ca | linkedin.com/in/gursimar-singh | github.com/gursi26

Education

University of Toronto — Toronto, ON
B.Sc. Computer Science with a focus in AI, Minor in Mathematics — *Sept. 2022 – May 2026*

- **Relevant Coursework** - Foundations of Computer Science I & II, Data Structures and Analysis, Multivariable Calculus with Proofs, Probability Statistics and Data Analysis I, Systems Programming
- 3.98 cGPA, Dean's List Scholar

Experience

Data Science Intern — May 2024 – Present
Loblaw Companies Limited — *Toronto, ON*

Machine Learning Research Assistant — Sept. 2023 – April 2024
Cognitive Neuroscience & Sensorimotor Integration Laboratory (CoNSens Lab) — *Toronto, ON*

- Using state-of-the-art **convolutional architectures** to model the ventral and dorsal streams in the human brain for **object classification** and **robotic grasping** tasks using **PyTorch**
- Working on novel, **task-agnostic architectures** and **data visualization and analysis** methods to compare the emergence of separate neural pathways to EEG data from the human brain.

Machine Learning Engineer — May 2023 – July 2023
PhotograFirst — *Toronto, ON*

- Built models for **Computer Vision** tasks like depth detection and semantic segmentation using **PyTorch** and **OpenCV**, achieving **over 90% accuracy** on real-world image culling tasks.
- Used **Agile** for project management, trained models on distributed GPU clusters, and deployed on **AWS S3**.

Project Director — Sept. 2022 – May 2023
University of Toronto Machine Intelligence Student Team (UTMIST) × PhotograFirst — *Toronto, ON*

- Led a team of 9 developers to make image culling software with complex **Computer Vision** models like depth detection, semantic segmentation and neural style extraction in **PyTorch**, **Tensorflow** and **OpenCV**.

Projects

Research Paper Implementations | *Python, PyTorch, OpenCV, Hugging Face, NLTK* — GitHub Link

- Implemented over 15 state-of-the-art research papers in topics like **Computer Vision**, **NLP** and **Implicit Neural Representations** using **PyTorch**.
- Popular papers include Transformers, GPT, BERT, GANs and Neural Style Transfer.

Studeasy | *Python, Scikit-Learn, Flask* — GitHub Link

- Built a study tool for students using the OpenAI GPT API with features like study notes generation, **Retrieval Augmented Generation (RAG)** for question answering grounded on textbooks, course syllabus summarization, and automatic question generation and answer grading with feedback.
- Won **Second Place** at **Hack the Mist 2023** amongst **over 30 teams** and **120 participants**.

Virtual Whiteboard | *Python, Scikit-Learn, OpenCV, Keras* — GitHub Link

- Built a tool that uses **pose estimation** to extract hand pose landmarks from a video feed and classifies them using a **deep neural network** in **Keras** to allow users to draw on screen through hand gestures.
- Open sourced at **Hacktoberfest 2021** and gathered **31 stars** on GitHub

Technical Skills

Languages: Python, SQL, C, Java, R, Rust
Libraries: PyTorch, Tensorflow, Keras, Scikit-Learn, Pandas, OpenCV, NLTK, Hugging Face, Matplotlib, Flask
Developer Tools: Git, GitHub, Jira, Docker, Google Colaboratory, VS Code