Shivom Sharma

647-515-4096 shivom.dev shivom.sharma.eng@gmail.com shivomsharma RealShivomSharma

Education

McMaster University **Expected May 2026**

Bachelor of Engineering in Mechatronics Engineering and Business (CO-OP) 3.4/4.0 GPA *Hamilton, Ontario*

- Coursework: DSA, Operating Systems, Embedded Systems, Networks, Machine Learning, Statistics, Financial Modelling

Experience

Tesla **May 2025 – August 2025**

Software Engineer Intern *Austin, Texas*

- Developed AI agent SDKs in Go/TypeScript, enabling natural language queries across robot and station telemetry
- Deployed agent using Docker and Kubernetes, utilizing request affinity for 2X faster in-memory session handling
- Optimized RAG pipelines with 500GB+ Confluence and MongoDB ingestion, boosting LLM retrieval accuracy by 40%
- Leveraged Go's concurrency model to build an API gateway handling thousands of requests from factory systems
- Instituted a part version control system in Python, React, and MongoDB, reducing manufacturing data conflicts by 90%, contributing to $300k in incremental revenue

Tesla **June 2024 – August 2024**

Software Engineer Intern *Austin, Texas*

- Built a distributed Redis + Celery backend with GraphQL APIs to deliver real-time factory metrics to 2000+ engineers
- Refactored SQL Server, PostgreSQL, and MySQL schemas to reduce query latency by 18% in cross-platform services
- Accelerated factory layout visualization speed by 20% using graph optimizations with Djikstra's algorithm
- Re-engineered ETL pipelines in Airflow and FastAPI, cutting layout load times by 83%
- Increased code coverage by 25% via CI/CD integration and implementation of unit and A/B test frameworks

Tesla **September 2023 – May 2024**

Controls Engineer Intern *Austin, Texas*

- Delivered a high-speed computer vision pipeline in Python for Cybertruck rotor QC, achieving 98% accuracy at 22ms latency per part, saving $242K annually
- Integrated C# APIs to automate FTP image logging, collecting 5,000+ daily training samples for model refinement
- Collaborated with hardware teams to reduce system cost by $20K per line via join software/hardware optimization
- Programmed PLC logic into Tesla Standard Library, cutting robot cycle times by 30% across multiple production lines

McMaster University **March 2025 – Present**

Undergraduate Researcher - High Performance Computing *Hamilton, Ontario*

- Built a Fast Multipole BEM solver in C++/CUDA for Laplace/Helmholtz PDEs, achieving 4x compression vs BEM++
- Created data visualizations and technical reports to present simulation insights to researchers at Waterloo
- Mentored fellow undergrad through 10+ code reviews, delivering structured guidance in HPC topics

Projects

BOOX EInk API Integration | *Go, Bash, Docker, REST API*

- Built a Go CLI to upload textbooks/manga to E-Inks via MangaDex/Cloud storage APIs, achieving 50MB/s transfer

Stepper-Motor ASIP | *C++, Verilog, FPGA, DE1-SoC*

- Designed a custom RISC-style processor in Verilog with 13 instructions to control precision stepper motors
- Added pipelining and instruction caching boosting execution speed by 60% vs general-purpose CPUs

OpenAI PPO Agent | *Python, Pytorch, OpenAI Gym, Docker*

- Reproduced OpenAI's PPO algorithm to beat baseline in stochastic Pong by 17 points on average
- Tuned neural network architecture for faster convergence, enabling full training in under 30 minutes

Technical Skills and Interests

Languages: Python, C, C++, Go, TypeScript, SQL, Verilog, Java, Lua
Frameworks: React, Flask, GraphQL, REST, Websockets, gRPC
Tools: Kubernetes, Kafka, Git, AWS, Azure, Linux, Figma, Clickhouse
Concepts: Distributed Systems, OOP, Full Stack, LLMs, Cloud Computing, Agile, Scrum
Interests: AI/ML, Video Editing, Photography, Basketball