Shivom Sharma

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Education

McMaster University, Mechatronics Engineering & Management CO-OP Expected Apr. 2026
Mechatronics Engineering and Management [CO-OP] *Hamilton, ON*

- **Relevant Courses:** Operating Systems (C), Real-Time OS (C), Data Structures & Algorithms (C++), Machine Learning (Python), Embedded Systems (C, FPGA), Software Development. Financial Modelling (Excel, Python)

Experience

Tesla Austin, TX
Software Engineer Intern *Jun. 2024 – Aug. 2024*

- Architected and optimized ETL pipeline leveraging **Airflow** and **Pandas**, achieving **90%** reduction in processing time across **40+ models** through advanced parallelization and performance tuning. Implemented efficient model compression for **Amazon S3** storage and executed seamless data migration to **SQL Server**, significantly improving cross-team data accessibility and reliability.
- Engineered a **Python** service leveraging **Redis** caching and **GraphQL** APIs that cut client request footprint by **50%** and reduced latency by **80%**, significantly enhancing service responsiveness.
- Streamlined CI/CD pipelines using **Docker/Kubernetes** and **GitHub Actions**, increasing deployment efficiency by **15%** and reducing production downtime.

Tesla Austin, TX
Controls Software Development Intern *Sep. 2023 – May 2024*

- Designed and implemented high-speed **Python/Halcon** vision algorithm for Cybertruck rotor inspection, achieving **97% accuracy** at **22ms** per part, enabling automated quality control for **7,000 parts/week**.
- Spearheaded cross-functional efforts to refine hardware/software requirements, reducing project costs by **$10,000** through strategic component selection.
- Instituted **Git** version control and trained over **7 team members**, reducing onboarding time by **20%** and elevating production line efficiency by **15%**.
- Optimized **PLC** logic for pneumatic controls, cutting cycle times by **30%** and boosting manufacturing throughput.

National Bank of Canada Toronto, ON
Senior Desktop IT Analyst – Financial Markets *May 2022 – Sep. 2022*

- Implemented **VBA**-driven IT solutions for over **50 VIP traders and developers**, cutting workstation setup time by **30%** and accelerating market readiness.
- Developed robust disk imaging and data migration workflows for **250+ trader workstations** using scripting tools, reducing downtime by **95%** and ensuring seamless market operations.

Projects

Atari Pong AI with Proximal Policy Optimization | *Python, PyTorch, OpenAI Gym*

- Trained a reinforcement learning agent with an **MLP** architecture and frame stacking that improved the average game score by **17 points** over **500 episodes**, demonstrating effective policy optimization.

Pacemaker Communication Interface | *Flask, C, SQLite, Simulink*

- Created a full-stack application for pacemaker data management using **serial communication**, implementing **SHA-256** encryption to secure patient records and comply with data privacy standards.

Boox CLI Textbook/Manga Uploader | *Go, Unix, MangaDex API*

- Engineered a **Go**-based CLI tool utilizing **cobra-cli** and shell scripting to automate textbook and manga uploads to an e-ink tablet, streamlining digital content management.

STM32 Stepper Motor Controller | *C, Keil, Embedded Systems*

- Developed a temperature-regulated stepper motor controller for **STM32** with both half-step and full-step controls, optimizing motor precision and reliability under varying conditions.

Technical Skills

Languages: Python, C, C++, Go, SQL, JavaScript/HTML/CSS, Java, Verilog
Frameworks: PyTorch, Flask, FastAPI, React, Node.js, GraphQL
Tools: Git, Docker/Kubernetes, AWS, Redis, Airflow, Kafka, CI/CD
Systems: Linux/Unix, Windows, PLC/SCADA, Embedded Systems (STM32, De1-SoC)