

JOSHUA DEBELE

Calgary, AB

587-664-9709 joshdebele8@gmail.com linkedin.com/in/joshua-debele-6a457a239 github.com/JoshCodeAligator

Education

Schulich School of Engineering, University of Calgary

B.Sc. Software Engineering

Aug. 2025

Calgary, AB

Technical Skills

Languages: Python, Java, JavaScript/TypeScript, SQL, C++, Flutter

Backend & Full-Stack: React/Next.js, REST APIs, PostgreSQL, MySQL, CI/CD with GitHub Actions

Cloud/Infrastructure: Docker, AWS, GCP, Linux, Kubernetes, Terraform

Machine Learning/AI: PyTorch, TensorFlow/Keras, NumPy, SciPy, OpenCV; model training, benchmarking, optimization

Other: Testing, Debugging, Networking fundamentals

Experience

NSERC USRA — Research Assistant

May 2025 – Aug. 2025

University of Calgary

Calgary, AB

- Built a V2X edge-computing pipeline that splits YOLOv5 across vehicles/RSUs to reduce end-to-end inference delay
- Implemented a two-stage optimizer (group knapsack + convex allocation) for RSU compute (alpha) & bandwidth (beta); added a GA-based split-point search to produce per-slot optimal plans
- Productionized Python modules (`dnn_split_singleframe.py` and `orchestrator`) with structured logging, unit tests, and CI; scripted reproducible experiments with timing/throughput instrumentation
- Analyzed compute/throughput tradeoffs; delivered weekly reports and reviews with Dr. Huaqing Wu & Zheng Liu

Coding Instructor

Sep. 2023 – May 2025

Code Ninjas

Chestermere, AB

- Taught 1:1 and small-group sessions from Scratch to JavaScript & Unity; created lesson assets that improved learner progression
- Guided students through project milestones; documented progress and coached debugging best practices

E-learning & Web Development Intern

May 2022 – Aug. 2022

The Immigrant Education Society (TIES)

Calgary, AB

- Shipped a resume-builder web app (JS/HTML/CSS); improved LMS reliability by reducing CSS regressions and bugs
- Standardized CSS and added tests (Git + PR reviews), improving maintainability and user experience

Projects

V2X DNN Split Optimizer | Python (NumPy/SciPy), GA, YOLOv5

May 2025 - Aug. 2025

- Engineered an edge **V2X pipeline** that partitions YOLOv5 across vehicles and roadside units (RSUs) to reduce real-time inference delay
- Designed a **two-stage optimizer**: group-knapsack selection + convex resource allocation for RSU compute (α) and uplink bandwidth (β); integrated a **GA-based split-layer search** to output per-slot optimal plans under dynamic loads
- Validated with **reproducible experiments** (CI, timing, throughput) on **YOLOv5 (7 layers)** under realistic compute/load profiles

Capstone Project – PatchNotes | Flutter, Firebase, ESP32, OpenCV

Nov. 2025 - Apr. 2025

- Built a cross-platform mobile app and wearable device to monitor wound infections via hydrogel colour changes, providing real-time patient and clinician insights
- Integrated **Flutter UI**, Firebase authentication/storage, and ESP32 image capture with cloud-based **OpenCV analysis**; collaborated across hardware, software, and image processing teams

Pet Adoption App | Next.js, Tailwind CSS, MySQL, Selenium, GitHub Actions

Apr. 2024

- Developed a full-stack web app for multi-rescue pet listings with **schema/index tuning** for fast multi-filter search and pagination
- Implemented **CI/CD pipelines**: enforced pre-merge checks with Jest unit tests and Selenium IDE end-to-end tests; seeded data for reproducible development environments

Awards & Activities

NSERC Undergraduate Student Research Award

Summer 2025

University of Calgary

Calgary, AB