DANIEL DEBRUN

Toronto, Canada | danieldebrun.brown@mail.utoronto.ca | Canadian, EU Citizen

Portfolio: danieldebrun.com Phone: (437) 223 6315 LinkedIn: danieldebrun Github: daniel-debrun

EDUCATION

University of Toronto - *Honors B.Sc in* **Applied Statistics, Computer Science** *Sept 2023 – Expected 2027*

- **Relevant Coursework:** Machine Learning, Probability and Statistics, Software Design, Software Tools and Systems Programming, Computer Architecture, Effective Writing, Computer Organization, Discrete Math
- **Clubs and Activities:** Hackathons (MakeUoft, UtraHacks, GenAI Genesis, UTMIST AI^2), Google Developer Student Club

EXPERIENCE

Software Lead | *UTASR (University of Toronto Autonomous Scale Racing)* *Jul 2024 – Present*

- **Founded** and led the software division, building core workflows, managing sprint planning for a **25-member engineering team**, and guiding cross-functional collaboration across **ML, web, optimization, and data teams**.
- Oversaw project timelines and resource planning, adapting workflows to evolving system constraints, hardware limitations, and integration demands while ensuring consistency in model quality and real-time performance.
- Providing **technical leadership** by mentoring team members, teaching project-specific ML, systems, and robotics concepts, and contributing to development across critical modules including perception, control, and infrastructure.

Legal Assistant | *Dushahi Law Corp* *Aug 2021 – Jan 2024*

- Developed an automated tool that populates government web forms with internal case data, enhancing workflow efficiency.
- Conducted case research and **managed documentation** to support legal proceedings while maintaining confidentiality.
- Designed and implemented digitization protocols for records, improving accuracy and efficiency in data handling.

PROJECTS

Autonomous RC Car | *UTASR* *github repo*

- Training a **GRU-based behavioral cloning** model mapping stereo and IMU state to steering/throttle; achieved smooth, reactive control under dynamic track conditions using **supervised imitation learning**.
- Fine-tuned and optimized **ResNet** models for real-time feature extraction, and built a modular **PyTorch** environment with runtime diagnostics to enable reproducible performance profiling and evaluation.
- Fused stereo depth and sensor values using OpenCV for **30Hz real-time** localization on **NVIDIA Jetson**, with latency and throughput profiling across the pipeline, enabling drift correction and efficient runtime performance.

Automated Hedge Fund *github repo*

- Developing an automated trading system using **transformer models**, evaluating various architectures and **feature engineering** techniques to predict multiasset price movements from technical, quantitative, and fundamental features.
- Integrating **LangChain-driven LLM agents** to extract and reason in real-time sentiment from various live news sources, financial reports, and media feeds, enabling adaptive, context-sensitive trading strategies.
- Developing reinforcement learning trading agents trained on EDGAR data, using **StableBaselines3** to enhance existing strategies through integration of technical, quantitative and sentiment-based signals.

NetShell | *Course Project* *2025*

- Developed a Unix-style shell in C, supporting command parsing, piping, background execution, signal handling, job control, and custom commands, while ensuring compatibility with all Linux bash commands through efficient memory management.
- Engineered dynamic environment variable management, process tracking using optimized data structures, and enabled client-server communication with custom messaging protocols for inter-process communication.

CanvasAI | *Course Project* *2024*

- Managed sprints, stand-ups, and retrospectives for a 4-person team on a semester-long project using Git, ensuring task ownership, continuous delivery, and milestone alignment through Agile coordination and sprint prioritization.
- Designed a dynamic multilayer painting system with rendering order, alpha blending, and export logic, enabling expressive AI-assisted artwork creation via prompt-based image generation via Ollama-integrated AI pipeline.

SKILLS

Core Competencies:	Technical Leadership, Collaboration, Problem Solving, Time Management, Communication
Programming:	Python, Java, C, R, SQL, Assembly, Bash, HTML/CSS
Frameworks & Libraries:	PyTorch, TensorFlow, Scikit-Learn, NumPy, Pandas, Matplotlib, LangChain, OpenCV
Tools & Platforms:	Linux, Git, Jupyter, Android Studio, Raspberry Pi, Arduino
Machine Learning:	Transfer Learning, Temporal Modeling, Forecasting, Multimodal Learning, Optimization

AWARDS & HONORS

Schulich Leader Nomination: **1 of 1400 National** schulichleaders.com

Don Walker Scholarship: **1 of 80 Global** magna.com/scholarship

Highest Average & Course Award : English, French, Computer Science

Board French Speech Competition: Podium