

# Andrew Davis

andrew.davis@queensu.ca | +1-613-299-8649 | linkedin.com/in/andrew-davis

## Education

---

**BASc** – Applied Mathematics and Systems & Robotics Engineering – Queen's University – ON, Canada      Exp. May 2027

- 3.65 GPA, Dean's Honour List 2024 & 2025, Applied Mathematics DSC VP External 2025-26, Intramural Volleyball

## Experience

---

**Electric Propulsion Intern**, Airbus Defence and Space – Immenstaad am Bodensee, Germany      May 2025 – Aug 2025

- Designed custom C/C++ STM32 firmware and bootloader for a 2U electric propulsion CubeSat launching in 2026
- Developed a space-grade Modbus protocol over RS-485 to enable reliable payload to satellite communication
- Optimized software size by 24% and increased communication efficiency with custom data compression by 95%
- Managed sensor control systems, flash/RAM and firmware reallocations, crash recovery, and single-event effects
- Verified and tested satellite subsystems while managing schedules, risks, and strategies for space electronics

**Circuit Analyst Intern**, TechInsights – Ottawa, Canada      May 2024 – Aug 2024

- Performed circuit extraction on passive and active circuit dies in CMOS technology from SEM processed images
- Extracted standard logic cells from CPU, GPU, and NPU dies in MOSFET, FinFET, and FinFlex circuit technology
- Created accurate CAD schematics for complex circuits, showing functionality for customer reports
- Designed precise KLayout cell schematics for standard and complex gate cells from extracted GDSII die layers
- Produced a comprehensive user guide for KLayout streamlining employee training and enhancing team efficiency

**Customer Service Representative**, City of Ottawa – Ottawa, Canada      May 2022 – Aug 2023

- Provided customer support and facility management in large-scale recreational and community centers
- Regularly updated documents and databases storing >500,000 customer accounts, for city programs and camps
- Managed customer inquiries and complaints, and maintained a positive attitude while de-escalating situations
- Developed strong teamworking abilities, self-management, organizational, and interpersonal skills

## Projects

---

**Rocket Payload & Avionics**, Queen's Rocket Engineering Team – Kingston, Canada      Sept 2023 – Present

- Designed attitude determination board to determine accurate position and orientation of a 3U CubeSat payload
- Used CI/CD to design Kalman filters in C++ fusing data from GPS, IMU, and magnetometer, optimizing rocket GNC
- Integrated Raspberry Pi controlled ground station to display avionic telemetric data and live camera feed
- Created CAD assemblies and integrated aluminum bulkheads with FEA to ensure safe modular deployment

**Air Traffic Control Consensus Algorithm** – Queen's University, Smith Engineering      Sept 2024 – Dec 2024

- Led a team of 5 students to design an autonomous airplane landing consensus formation algorithm
- Designed a leader-based consensus algorithm optimizing current landing paths to save fuel and time
- Mathematically modeled fluctuating position-time functions based on simulated GPS & INS signals
- Simulated the landing of N agents in for modeled London Heathrow airspace using MATLAB architecture

**Terrain Collision Model and Force Detector** – Queen's University, Smith Engineering      Jan 2024 – Apr 2024

- Led a team of 5 students to design an IMU based force and impulse detector for Queen's Baja SAE team
- Developed a filtered algorithm in C++ to fuse accelerometer, gyroscope, and magnetometer data using Arduino
- Modeled the movement and impulse of suspension system of the car chassis over rough racing terrain
- Organized team meetings, documented progress, and participated in design reviews with key stakeholders

## Skills

---

**Software and Electrical:** C, C++, Git, GitHub, Python, Java, Excel, Arduino, Raspberry Pi, MATLAB, KiCAD, SPICE, Soldering  
**Engineering and Systems:** JIRA, Confluence, SolidWorks, CATIA, FEA, Kalman Filters, Sensor Fusion, Data Analysis