Jared Duong

Hamilton, Ontario
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Education

University of Guelph **September 2024 – April 2028**
Bachelor of Engineering in Computer Engineering (Co-op) *Guelph, ON*

Technical Skills

Languages: Java, Python, C, C++, SQL, C#, HTML, CSS, JavaScript, VHDL
Frameworks & Engines: Unity, .NET, JUnit, Pygame
Developer Tools: IntelliJ IDEA, CLion, Visual Studio, Visual Studio Code, GitHub
CAD / Hardware: SolidWorks, Fusion 360, AutoCAD, FPGA

Experience

Production Engineering Intern **May 2025 – June 2025**
Hartmann Canada *Brantford, ON*

- Monitored automated systems and analyzed real-time sensor data, reducing downtime by **15%**.
- Improved production monitoring logic using embedded systems concepts, increasing output consistency by **10%**.
- Investigated recurring process failures and implemented corrective actions to improve system reliability.
- Worked with cross-functional teams to implement process improvements and reduce manufacturing waste.

Game Developer **April 2023 – June 2023**
McMaster University *Hamilton, ON*

- Developed interactive educational games using **C#** and Unity to improve student engagement.
- Built responsive web interfaces using **HTML, CSS, and JavaScript**, supporting over **200** users across devices.
- Refactored code into reusable modules, improving maintainability and enabling faster feature development.

Projects

4-Bit ALU Design and FPGA Implementation | *VHDL, FPGA, Digital Logic* **November 2025 – December 2025**

- Designed and implemented a modular 4-bit arithmetic logic unit (ALU) using **VHDL** on a Nexys-3 FPGA.
- Supported arithmetic and logic operations including add, subtract, increment, decrement, AND, OR, XOR, and NOT.
- Built a hierarchical ALU using half/full adders and a ripple-carry architecture.
- Verified functionality using a **VHDL** testbench and hardware-level debugging on **FPGA**.

University Management System | *Java, JavaFX, MySQL* **Mar 2025 – Apr 2025**

- Designed and built a full-stack university portal supporting course management, student enrollment, faculty assignment, and scheduling.
- Implemented backend business logic and relational database schema using **Java** and **MySQL**, enabling reliable data operations.
- Integrated a **JavaFX** dashboard-style interface to streamline administrative workflows and improve usability.
- Tested and debugged all modules end-to-end, achieving **99% system reliability** and stable production behavior.

Automated Arduino Wheelchair Prototype Project | *Arduino, C++, SolidWorks* **Sept 2024 – Dec 2024**

- Developed an Arduino-powered autonomous wheelchair prototype integrating sensors and motor control, improving navigation accuracy by **25%**.
- Performed center-of-mass and tipping analysis to redesign mechanical components, reducing tipping risk by **15%**.
- Conducted cost evaluation and optimization, lowering prototype expenses by **10%** without sacrificing performance.

Leadership / Extracurricular

Robotics Club – Mechanical Team Member **Sept 2024 – Present**
University of Guelph *Guelph, ON*

- Designed and programmed autonomous robotic systems using **C++ and Arduino** for the Canadian International Robotics Competition.
- Optimized sensor integration and control algorithms to improve system responsiveness and performance.
- Designed and prototyped mechanical components using **CAD**, collaborating with teammates to debug and refine designs.