Duncan Finlayson

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EDUCATION

University of Western Ontario — London, Ontario
Bachelor of Science - Specialization in Computer Science — *Expected Graduation: April 2026*
- Courses: Databases, Operating Systems, Computer Architecture, Data Structures and Algorithms, Intro. to Software Engineering, Intro. to Artificial Intelligence

EXPERIENCE

Western Engineering AutoPilot Club — November 2024 – Present
Software Engineer — *London, Ontario*
- Designed and developed custom race tracks in **Python** using **NumPy** and **Shapely**, creating track layouts with dynamic objects and obstacles, ensuring high flexibility and realism in simulation environments.
- Ensured **100%** track navigability by implementing a connectivity validation system using **Shapely** geometric operations, preventing obstacles from blocking the track.
- Optimized obstacle placement efficiency by **40%** through a dynamic resizing algorithm, reducing failed placements using **NumPy** and **Shapely**.
- Designed and implemented adaptive obstacle placement logic that strategically positions obstacles along track walls and center regions, improving track realism by **25%**.

Tim Hortons — July 2019 – Present
Team Member — *Kemptville - London, Ontario*
- Processed transactions with **98%** accuracy, ensuring a seamless checkout experience and **reducing** payment discrepancies.
- Delivered exceptional customer service in a **high-volume**, **fast-paced environment**, assisting an average of **100+** customers per shift, leading to **higher customer retention** and **satisfaction.**
- Built **strong customer relationships** by engaging in friendly interactions, contributing to a **20%** increase in repeat customers over time
- Maintained a **100%** attendance record, ensuring **reliable coverage** and **consistency** during **high-demand shifts**

PROJECTS

Blockchain Fund Manager | *Hack Western Winner, React.js, Rust* — December 2024
- **Awarded "Best Use of Tempo Labs"** at Hack Western for innovative blockchain integration.
- Designed and built a decentralized fund management platform using **React.js**, increasing user engagement by **50%** and reducing on boarding time by **40%**.
- Engineered **Rust-based** smart contracts to automate fund management, **eliminating manual processing errors** and **enhancing security**.

Personal Portfolio | *NextJS, React.js, TailwindCSS, Framer-Motion* — December 2024
- Built a fully responsive, high-performance portfolio using **Next.js**, improving page load speeds by **50%**.
- Implemented **Framer Motion** for dynamic animations, increasing user engagement and improving visual appeal.
- Leveraged **Tailwind CSS** for modular design, reducing development time by **25%** and ensuring a consistent look across all pages.

DayTrader's Diary | *Java, Jira, Confluence, Bitbucket* — Apr. 2024
- Developed an educational stock market simulation game using **Java**, with **80% of testers** gaining a better understanding of market strategies.
- Optimized project workflow and team collaboration by integrating **Jira**, **Bitbucket**, and **Confluence** for scheduling, documentation, and code reviews, **reducing development bottlenecks by 30%**.
- Implemented a developer/test mode, **cutting debugging time by 40%** and improving overall code stability.

TECHNICAL SKILLS

Languages: Java, Python, C/C++, JavaScript, HTML5/CSS, TypeScript, MySQL
Developer Tools: GitHub, Jira, Confluence, BitBucket
Frameworks / Technologies: React, Node.js, Next.js, JUnit, Framer Motion, Tailwind CSS
Libraries: Pandas, Numpy, Matplotlib, Shapely