

DANIEL O.

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EDUCATION

University of Prince Edward Island

Jan 2023 – May 2027

B.S. in Computer science, Minor in Economics

- Data Structures and Algorithms, Software Engineering, Operating Systems, System Design

CERTIFICATIONS

- Google Cloud Fundamentals
- Google UX Design
- AI for Professional Development - 1Million Teachers

TECHNICAL SKILLS

Programming Languages: Python (NumPy, Pandas), Java, C++, JavaScript, SQL, NoSQL (MongoDB)

Frameworks & Tools: Git, Linux, Spring, Node.js, JUnit, REST APIs

Databases & Infrastructure: SQL, MongoDB, AWS, Docker

EXPERIENCE

Software Engineer Intern

British Columbia Electronic Library Network

Jan 2025 – April 2025

- Developed a drupal 10 module with API integrations using PHP and JSON, enabling dynamic rendering of community-specific data.
- Collaborated directly with a client to design and develop a custom Drupal 10 module for integrating Local Contexts Hub into Islandora-based digital repositories
- Implemented API integration to fetch and display Traditional Knowledge (TK) Labels
- Simplified complex problems into easy-to-understand terms, ensuring effective student comprehension.

PROJECTS

Monopoly Strategy Simulation | Java

- Designed and implemented a simulation engine modelling financial transaction, property management, and strategic decision-making.
- Developed four AI-driven strategies and executed 60+ simulations to evaluate performance across metrics (win rate, balance, asset distribution).
- Applied statistical analysis to interpret simulation outcomes, identifying the most effective long-term strategies analogous to portfolio back testing.

Particle Stimulator | Java, JavaFX, OOP

- Created an interactive, grid-based physics simulation with 9 distinct particle types, each with unique gravity, fluid dynamics, and chemical interaction behaviours.
- Engineered real-time particle updates in JavaFX, enabling smooth animations and responsive user input for placing and modifying particles on the grid.
- Implemented realistic behaviours such as sand falling and sliding, water flowing and spreading, oil floating above water, fire spreading and forming glass, acid dissolving metal, and steam rising and dissipating.
- Designed a modular OOP architecture to easily add new particle types or modify existing interactions without breaking core simulation logic.

UNBORED | Next.js, Tailwind CSS, React

- Developed a responsive real-time messaging platform with thread-based conversations and individual message histories.
- Built an intuitive side panel for thread navigation and optimized rendering performance with **Next.js server-side rendering** and dynamic font loading.
- Designed a **mobile-first UI** with Tailwind CSS, ensuring accessibility and usability across devices.
- Structured application state management to handle concurrent message updates without data conflicts or UI lag.