RANDY ZHU

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EDUCATION

University of British Columbia   GPA: 88%
Bachelor of Science, Computer Science and Software Engineering   *September 2023 – May 2027*

TECHNICAL SKILLS

Languages: Java, C#, Python, C, C++, TypeScript, Lisp (R6RS/Racket), SQL (some T-SQL)
Developer Tools: Git, Docker, VSCode, Visual Studio, IntelliJ, Azure, Linux
Testing Frameworks: JUnit, NUnit, PyTest, Playwright
Libraries: pandas, Matplotlib, MongoDB, jQuery, React, Swing, Java AWT, Power Apps Component Framework, Unity Game Engine, Flask, Firebase, ASP.NET, Entity Framework, SQLAlchemy, CsvHelper, Dynamics CRM
Developer Skills: Agile Software Development, Unit Testing, Test-Driven Development

WORK EXPERIENCE

Research Assistant   May 2025 – September 2025
Software Practices Lab (UBC Department of Computer Science)   *Vancouver, BC*
- Collaboratively developed unit test generation tool with a fellow summer research intern.
- Designed and implemented static and dynamic program analysis techniques to extract program data to facilitate unit test creation.
- Created LLM-assisted intelligent detection of global state in Python functions, with both a static and a dynamic analysis pass to determine whether objects should be mocked.
- Using PyTest, created high quality, repeated, and fast unit tests in an Assert-Act-Arrange style to detect bugs early on in the development lifecycle.

Power Platform Developer   September 2024 – April 2025
Teck Resources   *Vancouver, BC*
- Created calendar Power App component used by teams across the organization for scheduling and resource management
- Developed React photo viewer plugin with Typescript and Power Apps Component Framework
- Performed automated testing of Power Apps UIs using Dataverse API and Puppeteer in C#
- Transitioned legacy Excel spreadsheets to Power App solutions using Pandas and Python, converting data and accelerating ETL pipelines for business analysis teams.
- Architected efficient relational database schemas in Microsoft Dataverse

Undergraduate Teaching Assistant   July 2024 – Present
The University of British Columbia   *Vancouver, BC*
- Debugged and optimized students' event-driven Java Swing code in office hours and labs
- Led weekly labs with 90 students per week, achieving an average rating of 4.9/5 for student engagement, preparation, and fostering a positive learning environment
- Taught students low-level computer systems concepts such as basic computer architecture, assembly programming in a MIPS dialect, memory management in C, threading, and C++ vtables
- Advised students on debugging strategy for assignments involving complex memory allocation issues

PROJECTS

ExploTest | *Python, static and dynamic program analysis*   September 2025
- ExploTest is a research prototype used to generate unit tests from system-level integration tests. It captures procedure calls during whole-program execution and creates individual unit tests for each procedure.

Collidy Road | *Unity, C#, .NET*   July 2023
- Achieved 95th percentile rated game quality, voted on by other contestants in the game jam
- Debugged and developed player and hostile entity player interaction scripts in C# for a smooth gameplay experience
- Optimized game logic to allow for over 10000 hostile entities

AWARDS

Natural Sciences and Engineering Research Council of Canada Undergraduate Student Research Award   July 2025