DYLAN TUTTLE

Software Developer

jdylantuttle@gmail.com
(403) 614-1181
github.com/dylanjtuttle
linkedin.com/in/dylantuttle

EDUCATION

University of Calgary

BSc Computer Science, BSc Astrophysics, Sep 2017 - Apr 2024, Calgary, AB

SKILLS

Languages

C, C++, Rust, Python, Java, Haskell, Prolog, ARMv8 Assembly,
R, SQL, HTML, CSS

Libraries/APIs

CMake, GoogleTest, TANGO, OpenGL, JUnit, JavaFX, Matplotlib,
NumPy, Pandas, MySQL

Misc. Software

GitHub, GitLab, Android Studio, Jira, SourceTree, Tableau

PROJECTS

Soup – A simple compiler built in Rust

‡github.com/dylanjtuttle/soup

- Developed a compiler for a simple language I designed
- Compiler takes a single .soup le and compiles it to ARMv8 assembly
- Developed automated unit tests and set up a CI pipeline to run these tests every time new code is pushed to the repository

- Wrote a detailed language speci cation, stored in the repository wiki: github.com/dylanjtuttle/soup/wiki

MeowioKart

- Developed a 2D retro driving game loosely based on Mario Kart entirely in C for the Raspberry Pi with a partner for a class project
- Designed 4 levels for the player to drive through, avoiding various obstacles and obtaining powerups to reach the end before time runs out
- Drew assets to the screen pixel-by-pixel using the RPi framebuffer

Playlist Defender

- github.com/dylanjtuttle/playlist-defender
- Built a native Android app using Python in a two-person team
- Worked in a remote collaboration software development team over Slack and Zoom
- Participated in peer code reviews
- Became familiar with common software design principles, such as encapsulation, DRY, code refactoring, and self-documenting code

WORK EXPERIENCE

IBM

Compiler Developer Intern

May 2023 – Dec 2023, Markham, ON

- Found and fixed assertion failures and warnings throughout the codebase, helping empower the team to enable asserts and fatal warnings, ensuring fewer bugs make it to customers

National Research Council Canada

Software Developer Intern

May – Aug 2022, Kaleden, BC

- Developed a Delay Model Server (DMS) for the Dominion Radio Astrophysical Observatory Synthesis Telescope upgrade project
- Wrote a C++ wrapper around DiFXCalc, a NASA GSFC software program written in FORTRAN to calculate delay models
- Made minor changes to DiFXCalc source code to better align with project requirements
- Implemented a PyTango device server to allow for convenient interaction between the DMS and other components of the telescope
- Wrote comprehensive automated tests using GoogleTest and PyTest

- Created multiple documents to rigorously define design specifications and interfaces between the DMS and other components of the telescope

University of Calgary

Research Assistant – Software Translator

May – Sep 2021, Calgary, AB

- github.com/dylanjtuttle/rmap
- Worked under the supervision of Dr. Jo-Anne Brown to rewrite a research-critical data pipeline program comprised of legacy IDL code in Python
- Addressed decades of technical debt, refactoring to new, documented Python code for ease of future updates and enhancements
- Reverse engineered correct program output without well-defined requirements

Laboratory Teaching Assistant

Jan – May 2021

- Supervised a first-year physics laboratory over Zoom, assisting nearly 200 students every week