DYLAN TUTTLE

Software Developer

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EDUCATION

University of Calgary

BSc Computer Science, BSc Astrophysics

Sep 2017 – Present Calgary, AB

- Expected Graduation: December 2023
- Cumulative GPA: 3.51

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` file 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 specification, 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

Dominion Radio Astrophysical Observatory

Software Developer Intern

May – Aug 2022 Penticton, BC

- Developed a Delay Model Server (DMS) for the Synthesis Telescope upgrade project
- Worked in an agile Kanban software development team
- 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
- Wrote comprehensive automated tests using GoogleTest and PyTest
- Had 5 merge requests and over 90 commits accepted to project GitLab group
- 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

- Worked under the supervision of Dr. Jo-Anne Brown to rewrite a research-critical data pipeline program comprised of legacy IDL code in Python
- Improved software maintainability by addressing decades of technical debt and refactoring to modern, documented Python code
- Saved research group over $500 per year on obsolete software license costs

University of Calgary

Laboratory Teaching Assistant

Jan – May 2021 Calgary, AB

- Supervised a first-year physics laboratory over Zoom in a team with another TA, managing lab sections in two Zoom meetings simultaneously
- Assisted nearly 200 students every week with their questions about the material in a friendly, welcoming, and professional manner
- Graded students on their ability to communicate the material and prove their understanding