

- Education**
- Bachelor of IT major in Software Technology - Macquarie University (2019)
- Skills**
- Languages: Rust, Python, C#, C, C++, Java, Lua, SQL, HTML, CSS, Javascript
  - Tools: Git, Vim, VS Code, Visual Studio, JetBrains IDEs
  - Services: AWS, Github Actions
- Professional Work**
- Full-time Software Developer [Instaclustr \(acquired under NetApp\)](#)* (current employment, 2021-)
- I am one of two employees in the larger R&D team working on the [Shotover proxy](#) (rust)
  - Shotover is an open source L7 database proxy
    - Supports redis, cassandra and kafka
    - Use cases include load balancing, data encryption and caching
    - Custom query/response transformations can be written in rust
  - [My work on shotover](#) includes feature design, code/test implementation and PR reviews.
  - I built [windsock](#), a DB benchmark framework to support evaluation of shotover performance changes.
  - To support my work on shotover I frequently make contributions to open source dependencies when I find bugs or missing features e.g. [cdrs-tokio](#), [kafka-protocol](#)
- Full-time Software Developer [WiseTech Global](#)* (2016-2021)
- Worked in the embedded team working on our truck telematics devices which report truck data such as GPS, fuel, on board mass and tyre pressure. (python, C)
  - Worked on CargoWise One our main logistics management software. (C#, TSQL, Win-Forms)
  - Worked on the messaging system between CargoWise One and external services such as the customs system for various countries. (C#, TSQL, BizTalk, XSLT)
  - Worked on various web-based internal tools. (C#, TSQL, ASP.NET, Javascript)
  - Mentored multiple newstarters on working within my team. (6 months each)
- Hobby Projects**
- Contributor to the Rust ecosystem* (2017-2024)
- I have made [some contributions](#) to rustc itself
    - Most of my contributions are to rust's diagnostics, my favorite part of the language
  - I have made a lot of contributions to existing libraries in the Rust ecosystem including:
    - [wgpu](#) - Implementation of WebGPU used by Firefox
    - [Winit](#) - Cross platform Rust windowing library
    - [Vulkano](#) - High level Rust vulkan bindings
  - I have also made some libraries of my own:
    - [Winit Input Helper](#) - Processes winit events, allowing inputs to be queried at any time
    - [GGBASM](#) - Assembler for Gameboy accessed via a Rust library API
    - [Treeflection](#) - Pseudo-reflection functionality for Rust
    - [cargo run-wasm](#) - Trivially run wasm applications and examples in the browser
- DPedal - USB directional pedal* (2023)
- 3D printable mechanical parts designed in [Onshape](#).
  - PCB designed in kicad with reference to an open source keyboard.
  - Firmware written in rust, makes HID keyboard and mouse events in response to input.
  - Custom flashing application writes the firmware and configuration to the device.

***Super Smash Bros related projects - Tools for smash players and my own engine/game*** (2016-2022)

- [brawllib.rs](#) - A Rust library for parsing and processing [Brawl](#) character files.
- [rukaidata.com](#) - A framedata website for Brawl/Project M. Generator written in rust and frontend written in rust compiled to wasm, uses brawllib.rs. Hosted on AWS using EC2, S3, Route53, and cloudfront.
- [Platform Fighter Sandbox](#) - An engine for smash-like games, it features a character editor tightly integrated with gameplay. Written in Rust. Can import characters from Brawl via brawllib.rs.
- [Canon Collision](#) - A fork of Platform Fighter Sandbox to allow me to focus on building an actual game without worrying about making a generic engine. I have notably implemented a GLTF 3D renderer since the fork.

***Contributor to [Dolphin](#)*** (2015-2018)

- Dolphin is the most complete Gamecube/Wii emulator
- I contributed to the complete UI rewrite from wxWidgets to Qt.

***Built a slow and incomplete [Gameboy emulator](#) that boots several games*** (2016)