STEVEN JORUK | DEVELOPER

github.com/steven-joruk steven@joruk.com

PROFILE

I've always been interested in understanding how things work. From a young age I'd spend a lot of my free time writing home brew operating systems, emulators, and trying to implement various algorithms.

My ideal team would value quality, have enthusiasm for the problems they are solving, and would have a positive effect on the world - either through the products they create or their contributions to open-source software. In the near term I'd like to continue either as an individual contributor or as a technical lead.

SKILLS

RECENT PERSONAL PROJECTS

- Learning the Rust Analyzer code base to add new IDE assists.
- Rust FFI bindings for macOS' Security Framework.
- Conversation support for the Rust sudo plugin bindings.

OPERATING SYSTEMS AND PROGRAMMING LANGUAGES

I'm very familiar with Linux, macOS, Rust, C and Qt. I'm comfortable with Windows, modern C++, Swift and Python. **I've omitted other languages and frameworks to avoid turning up in too many search results.**

EXPERTISE

Refactoring legacy code, writing test suites, CI/CD pipeline creation and maintenance, debugging challenging faults and performance issues, designing new software and features, threat modeling and security analysis.

EXPERIENCE

SENIOR BACKEND ENGINEER, LAUNCHBADGE APRIL 2022 - PRESENT

LaunchBadge is a software services company.

- I'm currently leading a team to implement the Hashgraph consensus algorithm in Rust along with C# bindings and a Unity Network transport plugin. This enables game sessions without a central server or an individual host, which will provide significant cost savings to game developers. Read more at tashi.gg and tashi.dev.
- Lead a team that created a system enabling immediate fiat loans during merchant payments processing using customer's crypto as collateral.
- Worked on a team that created an auction website for the sale of barrels of alcohol using distributed ledger technology to record the ownership of bottles.
- Contributed to a Hedera hashgraph explorer and mirror node.

LEAD SOFTWARE DEVELOPER, BEYONDTRUST JANUARY 2020 - APRIL 2022

This was a promotion from my previous position. I continued working with the same team.

- Investigating porting C++ with Qt to Rust using an incremental approach. Develop proof of concepts for difficult areas, e.g. low level macOS APIs and a sudo plugin.
- Designed and implemented a privileged daemon to add support for macOS to the PasswordSafe product. This is written in Rust and has very high test coverage using the mockall crate and custom Open

Directory FFI bindings.

- Designed and implemented extra protections for sudo commands on macOS, which suffer from a time-of-check time-of-use (TOCTOU) vulnerability. This uses the Endpoint Security framework.
- Designed and implemented anti-tamper protection using the Endpoint Security framework. This involves preventing launchd and privileged users from stopping protected processes and modifying protected files, while still allowing legitimate actions from MDMs and the OS.

SENIOR SOFTWARE ENGINEER, BEYONDTRUST JANUARY 2018 - JANUARY 2021

- Worked as part of an agile product team that regularly interacts with 4 other agile teams. The macOS product is installed on hundreds of thousands of user's computers. It enables least-privilege security by allowing standard users to perform specific privileged actions and restricting unwanted actions
- Ported the same product to Linux.
- Implemented a Finder extension to allow standard users to install and remove application bundles.
- Factored out a core section of code to a privileged XPC helper.
- Helped bring our unit test count from 0 to 400, and our system test count from around 20 to 240. Coverage is around 80% when considering both suites.

SENIOR SOFTWARE DEVELOPER, TOUCHSTAR TECHNOLOGIES: JULY 2011 - JANUARY 2018

- Bring up and maintain BSPs targeting ARM used internationally in a wide range of environments, such as airplanes, trains, trucks, warehouses, and explosive atmospheres:
  - Windows Compact Edition for PXA255, PXA270 and OMAP3.
  - Android development for OMAP3 and i.MX6.
- Driver development and debugging of GPIO expanders, I2C, SPI, Bluetooth, WiFi, Ethernet, GPRS/3G, SDIO, SDHC, UARTs, USB, touch screens, battery gas gauges, CPLDs, accelerometers, graphics and micro controllers.
- Assist the applications team with debugging and optimisations. In one case I was able to reduce a national delivery company's on-device parcel parsing time from several hours to 30 seconds by interning strings.

GRADUATE SOFTWARE ENGINEER, MOBICA: JULY 2010 - JULY 2011

- Ported a C++ PDF e-book reader to a WinCE 5.0 device, making use of Adobe RMSDK and the Win32 API.
- Added features and fixed issues for a Linux graphics driver. I gained knowledge of the X Window architecture, OpenGL, kernel mode development and various debugging techniques.
- Added features and fixed issues for a 32-bit Windows Embedded Standard 7 WDDM 1.1 graphics driver. I worked heavily with hardware video overlays, from the control panel UI through to kernel mode.