

Jimmy Hartzell: Systems Programmer

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Skills

- **Programming languages:** Rust, C++, C, Haskell, Swift, Python, Objective-C, Bash, x86 assembly (32 and 64 bit)
- **Technologies:** Linux systems/low-latency network programming, Tokio, Reflex FRP, Yocto, AWS, Ledger Nano S, Redis, C++ template metaprogramming

Career Experience

- **Amtrak:** July 2023-Present, *Senior Principal Software Engineer*
 - **Technologies:** C++, HP NonStop
 - Developed simulator for ITCS Positive Train Control protocol
 - Fixed bugs in HP NonStop dispatching codebase
- **Savant Systems:** May 2021-June 2023, *Senior Embedded Linux Software Developer*
 - **Technologies:** Rust (incl. Tokio), Yocto, Swift, Objective-C, Redis
 - Wrote usermode Rust driver for Atmel energy meter
 - Adapted quickly to a decades-old Objective-C codebase
 - Developed and implemented migration plans for core components of system architecture
 - Rewrote Swift microservices and frameworks into Rust
 - Added caching layers around accesses to legacy key-value store, and implemented bidirectional synchronization between it and Redis
- **Obsidian Systems:** March 2018-May 2021, *Software Development Consultant*
 - **Technologies:** Haskell, Reflex FRP, C, Ledger Nano S, Nix, C++
 - Full-stack Haskell application development
 - Worked with a variety of clients, with diverse corporate culture and organizational systems
 - Worked on Incremental View, a database research project for incremental queries on Postgres
 - Wrote apps in embedded C on Ledger Nano S (a platform w/ 4K of RAM)
 - Refactored overengineered client C++ codebases
 - Did trainings and talks on C++, Rust, blockchain, and Haskell
- **Tower Research:** June 2013-March 2018, *Senior Software Developer*
 - **Technologies:** C++ (C++11, C++14), C++ template metaprogramming, Linux systems programming, clang-format, valgrind, gdb, FIX protocol, Intel64 assembly
 - Risk platform, C++ development (2017-2018):
 - * Wrote a new high-performance logging system
 - * Led a small team to add new trade reconciliation systems to comply with EU regulations
 - Lead training instructor (2016-2018):
 - * Developed and taught full-time C++, networking, systems, and low-latency programming curriculum for new hires in US and India
 - * Trained and mentored other instructors
 - FX trading desk, C++ development (2013-2016):
 - * Mentorship: First line of defense for team member questions
 - * Continuously made latency improvements for market data handlers
 - * Developed new aggregator project to aggregate internal liquidity
 - * Owned support for FX “last look” feature
 - * Wrote/maintained handlers for many financial protocols
- **Moat:** Feb 2011-March 2013, *Infrastructure Developer*
 - **Technologies:** Python, C++, Bash, AWS, S3
 - Led a 3-member team to develop server discovery and deployment scripts
 - Scalable bloom filter implementation in C++

Education

- **Cornell University:** *Bachelors in Computer Science*