ALEXANDER WILSON

07729346947 ◇ acwilson96@gmail.com ◇ rdtscp.github.io

WORK EXPERIENCE

Software Engineer, Meta, London Jun 2022 - Present
Systems Infrastructure

- Experimented optimising server-side cache sizes in order to free up 3GB of runtime memory for new features in a capacity constrained environment.
- Designed and implemented RPC protocols and backend functionality to allow services to cancel downstream jobs in order to reduce job timeouts and improve service reliability.

Software Engineer, Squarepoint Capital, London Aug 2020 - Jun 2022
Technology - Risk Systems

- Worked on stateless C++ microservices to perform real time processing of trades to track positions. Services were highly multithreaded in order to handle millions of trades per day. Made use of pub/sub messaging queues, and KDB databases for real-time and historical data. Services were highly robust.
- Designed, implemented, and tested C++ microservices to accompany position keeping services mentioned above for various bespoke business needs.
- Set up metrics, monitoring and alerting on production services using Prometheus/Grafana/VictorOps.
- Implemented recon/reporting jobs for data parity between old and new systems in order to safely migrate/deprecate legacy systems.

Software Engineer II, FactSet, London Aug 2018 - Aug 2020
Systems Infrastructure - Database Technologies

- C++: Profiling and analysing in-house database technology to improve read performance and scalability.
- Migrated untested python infrastructure to GitHub adding CI/CD and unit tests.
- Designed and implemented (using TDD) cloud deployed services, monitoring, alerting, and tooling.
- Managed a Software Engineer Intern who re-designed our database technology API for modern C++. The deliverable was well received and the intern received a return offer.

EDUCATION

BSc Computer Science, University of Edinburgh *Sept 2014 - July 2018*
Topics of Interest: 1st Class with Honours
Compilers, Computer Architecture, Operating Systems, and Programming Languages.

PROJECTS

Microbenchmarking Intel Knights Landing
Wrote C++ and x86 to measure latencies and bandwidths of the different memory components of the multicore processor. Extensive research into computer architecture and compilers.

[WIP] Bootstrapping a C/C++ Compiler
Project to bootstrap a C/C++ compiler (Lexing, Parsing, Semantic Analysis, Code Gen) from scratch in order to learn more about C++. Implemented some of my own standard libary classes to aid the project.

llvm-dxr
Docker image for DXR to index the LLVM codebase and serve the frontend using docker-compose.

LLVM Dead Code Elimination Pass
Implemented an LLVM pass to eliminate dead code using liveness analysis as part of a university coursework.

SKILLS/INTERESTS

Languages: C++ 11/14/17, Python 2/3, C, x86, BASH, q/kdb+
Technologies: Linux, macOS, git, perforce, valgrind, perf, cmake, clang, gcc, LLVM, Docker