

# ALEXANDER WILSON

07729346947 ◇ acwilson96@gmail.com ◇ [rdtscp.github.io](https://github.com/rdtscp)

## 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 library](#) classes to aid the project.

### llvm-dxr

Docker image for [DXR](#) to index the LLVM codebase and serve the frontend using docker-compose.

## SKILLS/INTERESTS

---

**Languages:** C++ 11/14/17, Python 2/3, C, x86, BASH, q/kdb+

**Technologies:** Linux, macOS, git, perforce, valgrind, perf, cmake, clang, LLVM, Docker

**Misc/Hobbies:** Reported a [bug](#) in LLDB related to runtime-thunks.

Attending C++ London Meetups to keep up to date with new C++ releases/features.

Teaching myself Piano