

# ALEXANDER WILSON

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## WORK EXPERIENCE

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### Software Engineer II, FactSet, London

Aug 2018 - Present

*Systems Infrastructure - Database Technologies*

- C++/Python: Used profiling driven methodology to improve sharded databases disk footprint and cold-read performance by up to 5x(5s to 1s), by using bloom filters.
- Migrated untested python infrastructure to GitHub and set up CI/CD with unit tests.
- Designed and implemented (using TDD) automated processes, monitoring, alerting, and tooling to aid in managing databases on the on-prem clusters.

### Software Engineer Intern, KAL, Edinburgh

Jun 2017 - Sept 2017

- C++/C#/.NET: Integrated a legacy C++ application with a newer C applications using .NET. Involved learning in-house tooling and application architecture. Presented my work to the entire company to kick off the products next-gen development.

## EDUCATION

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### BSc Computer Science, University of Edinburgh

Sept 2014 - July 2018

Courses of Interest:

1st Class with Honours

Compiling Techniques, Computer Architecture,

Operating Systems, and Elements of Programming Languages.

## PROJECTS

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### [Microbenchmarking Intel Knights Landing](#)

Involved writing c++ with inline x86 to evaluate the latencies and bandwidths of the different memory components of the multichip processor. Required extensive research into computer architecture and how code is translated into machine instructions/opcodes.

### [\[WIP\] Bootstrapping a C/C++ Compiler](#)

Attempting 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 crudely to aid the project.

### [llvm-dxr](#)

Created a docker image that uses Debian with [DXR](#) installed to index the LLVM codebase and serve the frontend webapp using docker-compose. Created this to learn and navigate the LLVM codebase, with future plans to deploy on the public cloud and regularly index the LLVM monorepo.

## SKILLS/INTERESTS

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### Languages:

C++ 11/14/17, Python 2/3, C, x86, BASH

### Technologies:

Linux, macOS, git, perforce, valgrind, perf, cmake, clang, LLVM, Docker

### Misc/Hobbies:

Reported a [bug](#) in LLDB related to runtime-thunks.

Attend C++ London Meetups Regularly.

Keep up to date with c++ releases.

Self Learning Piano