

ALASTAIR FLYNN

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EDUCATION

University of Oxford - Somerville College

MCompSci (Integrated Masters Degree)

2017 - 2021

- Masters – Distinction (equivalent to 4.0 GPA).
 - Dissertation implementing specific monads from category theory in Haskell.
 - Specialized in concurrency, functional programming, category theory, and quantum computing.
- Bachelors – 1st class honors (equivalent to 4.0 GPA).
 - Third year project applying machine learning to general game playing.
 - Awarded Shaw Lefevre scholarship for exceptional results in second-year examinations.

TECHNICAL EXPERTISE

Programming Languages	Golang, SQL, Python, Rust, Bash, Haskell
Cloud Technologies	Kubernetes, Terraform, Docker, LXD, AWS, Azure, OpenStack
Tools	Vim, Git, GitHub, Unix, Ubuntu, Jenkins, Jira
Databases	SQLite, DQLite, MongoDB

SOFTWARE ENGINEERING EXPERIENCE

Canonical

Remote, UK

Juju Core - Software Engineer

February 2024 - Present

- Developed and maintained **Juju**, a cloud orchestration engine that enables automated deployment, integration, and lifecycle management of applications using Charms (codified DevOps expertise).
 - Fully open source, 15-year-old project with over 1.2 million LoC written in Golang.
 - Used by 10,000+ engineers at leading tech companies (IBM, Intel, T-Mobile, etc.).
- Played a lead role in transitioning the Juju backend from MongoDB to SQLite.
 - Untangled, rewrote, and simplified complex legacy code while normalizing the data schema.
- Designed and implemented key features for the Juju Terraform provider enabling fully automated deployments.
 - Enabled customers to fully automate Juju deployments and standardize integration testing.
- Automated generation of online documentation and introduced versioning, boosting usability and readership.
- Enhanced integration test suite written in Python and Bash, reducing bugs reported in Juju releases.
- Fixed critical Juju bugs on AWS, Azure, and OpenStack, ensuring robust customer deployments.
- Recruited new talent, conducted interviews, and reviewed written applications.
- Recognized by Canonical as a "Rising Star" in internal reviews for outstanding performance and contributions.

Office of the CTO - Software Engineer

September 2022 - February 2024

- Lead developer and architect of **SQLair**, an open source Golang library that extends SQL with specialized syntax to map between Golang types and database rows.
 - Designed SQLair to increase readability, reliability, and maintainability of SQL database interactions.
 - Built library from the ground up and developed it into fully featured product with an active user base both inside and outside of Canonical.
 - Contributed 12k out of the 13k lines of code in the GitHub repo (92%) and carefully reviewed other contributions, ensuring conceptual integrity across the codebase.
 - Acted as product owner, communicating with C-Suite leadership and advocating for adoption across the company, resulting in Juju and Notary, among others, embracing the library.
- Collaborated with Community and Marketing teams to represent Canonical at external events.

Speaking Engagements

- **SCALE 2025** *Pasadena, USA*: Automatically Orchestrate your Applications with Juju (Upcoming)
 - How Juju can unlock the power of open-source software for small businesses.
- **OpenSearchCon 2023** *Seattle, USA*: OpenSearch+Infra on Your Laptop in Under 5 Minutes
 - How Juju can orchestrate Opensearch on a virtual cloud on Your laptop (and on other clouds).
- **DORS/CLUC 2023** *Zagreb, Croatia*: Kubernetes Is Not Open Source
 - Spoke on what it means to be open source and how Canonical's philosophy reflects that.
- **Ubuntu Summit 2023** *Riga, Latvia*: Talking SQL in Go
 - An introduction to SQLair, the Golang library designed and led during time at Canonical.

Infosys

Remote, UK

Intern - Software Engineer

July 2020 - September 2020

- Built a facial recognition model utilizing quantum machine learning.
- Used PyTorch to integrate quantum circuits, constructed using the PennyLane library, into a classical neural network.

Metaswitch Networks

Edinburgh, UK

Intern - Software Engineer

July 2019 - September 2019

- Contributed Rust code to several microservices in a large telco solution.
- Conducted a 3 week-long security review of the product, patching multiple identified issues.
- Offered maximum bonus available for outstanding performance.

PROFESSIONAL DEVELOPMENT

No Name Kitchen

Serbia

Volunteer

May 2022 - July 2022

- Provided vital support to migrants, delivering food, healthcare, and lifesaving assistance.
- Authored reports to raise awareness of the humanitarian challenges faced by migrants travelling through the Balkans.

NUCO Travel

France

Ski Representative

December 2021 - February 2022

- Provided exceptional customer service and sold upgrades to ski packages.

INTERESTS & ACHIEVEMENTS

- Advanced pianist (ABRSM Grade 8).
- Recipient of the Gold Duke of Edinburgh award.
- Keen runner and orienteer.