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Open Source Software Maintainer - 2009 - Present

- cargo-quickinstall
  - Installer for pre-compiled binary packages (~1k package installs/day).
  - Automated package builder (using Github Actions Cronjobs to build untrusted code).
  - Feedback loop (via stats server) to make sure we build the packages that people are asking for.
  - Package repository is also used by popular `cargo-binstall` project.
  - Many `good first issue` tickets addressed, and a few repeat contributors.
  - Repo: alsuren/cargo-quickinstall
  - Blog post: 2022/07/10/cargo-quickinstall
- mijia-homie
  - Set of Rust daemons for capturing temperature sensor data for plotting.
  - Bluetooth -> Raspberry Pi -> MQTT (homie) -> InfluxDB -> Grafana
  - Repo: alsuren/mijia-homie
  - Blog post/presentation: 2022/02/19/mijia-homie-presentation
- hoverkite
  - Embedded Rust project to fly a kite using a gamepad and a hoverboard.
  - Repo: hoverkite/hoverkite
- SixDoFone
  - Tool to use a mobile phone to control position and rotation (6DoF) of a robot arm.
  - Uses WebXR in the phone's browser and Python + rerun.io on the laptop.
  - Repo: alsuren/sixdofone

Opvia - Senior Software Engineer - 11/2022 - 07/2024

Opvia is a no-code database (like Notion) focussed on process data management and training for regulated industries (e.g. food and drink and pharmaceutical manufacturing and research). I joined the company when we were in an 8 person office in a co-working space, and helped it grow to $1M ARR.

- Built the ability to instantly view **any** document/table as it was at **any** point in time, and revert to previous revisions. Massive win when selling into regulated industries.
- Re-architected table queries to make them responsive at 100k rows (fixed multi-minute latency on 5k row tables). Allowed a big pharmaceutical client to use us for their production workflows.
- Championed DevOps best practices (incident response procedure, runtime feature flags, shift left on testing, automatic nightly deploys). Gave us the confidence to ship new features at pace and recover quickly, even with a growing customer base.
- Introduced pubsub system for running periodic tasks and expensive operations like PDF export, OCR and Search + RAG indexing without impacting user experience.
- Re-architected our user-facing python automation system to be more beginner-friendly and easier for us to maintain.
- Stood up the infrastructure for our next generation "Seal" app.
- Added the ability to print and scan labels from the browser, for real-world asset management.
- Buzzwords: GxP, PostgreSQL, Full Stack Typescript, React, GraphQL, Python, Pandas, Github Actions, PubSub, DataDog, GCP, Gemini.

Tably - Senior Software Engineer - 10/2021 - 07/2022

Tably is an early stage startup. The core idea is very similar to Google Sheets, but with key insights that allow it to be taken in a different direction.

- Created our data import pipeline for multiple different data sources (based on Airbyte - read more at https://tably.com/blog/connecting-people-with-their-data).
    - Drove the selection of an ergonomic frontend web framework (Sycamore) and submitted patches to make it suit our needs.
- Improved the ergonomics and safety of our borsh+OT-based data layer.
- Worked with CEO on designing and running direction-setting workshops.
- Mentored junior engineers on sometimes orthogonal projects, and with senior engineers on mentoring junior engineers.
- Buzzwords: Mentoring, Full Stack Rust, WebAssembly, Operational Transforms, Extract Transform Load, Airbyte, JSONSchema, AWS, Github Actions.

Red Badger - Senior Software Engineer - 10/2019 - 10/2021

Red Badger is a software consultancy, deploying product led teams into blue-chip companies.

- Worked on a TransferWise clone for Santander:
    - Refactored ledger logic, to prevent webhook retries from causing data inconsistency (Typescript helped a lot here).
    - Implemented multi-tenant support, and enabled compliance testing ready for launch.
    - Handed over key pieces of technology and ways of working to incoming supplier.
- Wrote a communication and file sharing platform for NHS England:
    - Mentored junior team members on Rust (sqlx + async-graphql) and Kubernetes.
    - Learned about complexity and stakeholder management.
- Wrote a public facing compensation claim flow for NHS Wales' covid response.
    - Learned about scope reduction, and executing on short timescales with external dependencies.
- Wrote wasmCloud demo for Cloud Native Compute Foundation conference:
    - Distributed NATS/NGS lattice for automatic failover + Kubernetes for scaling.
    - Multi-Cloud cluster setup across AWS and GCP, using Pulumi
    - Learned about Developer Experience design, through the lens of Employee Experience design.
- Line Managed two other engineers:
    - Facilitated a career change from Test Lead to Software Engineer
    - Managed skills progression and advocated for promotions (using a "ladder" based framework)
- Buzzwords: Line Management, Full Stack Typescript, Full Stack Rust, Next.js, WebAssembly, PostgreSQL, NATS, GCP, Azure, Github Actions, Pulumi, Terraform, Kubernetes.

Conversocial - Senior Software Engineer - 12/2015 - 07/2019

Conversocial is a SaaS company, providing call-centre software for dealing with queries on social media.

- Integrated with Twitter and Facebook APIs for real-time messaging.
- Consumed from the Twitter and Facebook firehoses.
- Debugged MongoDB and RabbitMQ outages at scale.
- Brought the platform (previously delete-nothing) into GDPR compliance.

- Led a team to deal with compliance fallout from the Cambridge Analytica scandal.
- Rewrote core app frontend from knockout to React + Redux + CSSModules.
- Migrated our local development environment from Vagrant to Docker For Mac
- Buzzwords: Python, Django, MongoDB, RabbitMQ, GDPR, Webhooks, Twitter, Facebook, Docker.

Truphone - Software Engineer - 09/2012 - 03/2014

Truphone is a "small" mobile network. I worked in their labs team.

- Deployed and maintained the SIP and XMPP real-time voice and instant messaging servers to support the Truphone app.
- Shared knowledge with others on XMPP and git.
- Applied DevOps reliability/scalability and deployability principles (puppet, monitoring and process supervision).
- Buzzwords: XMPP, SIP, VoIP, Open Standards, DevOps, Puppet, PubSub.

Collabora - Software Engineer - 09/2009 - 09/2011

Collabora is an Open Source Software Consultancy which maintains many core pieces of technology for Desktop Linux.

- Developed and maintained APIs and protocol implementations for the Telepathy VoIP/IM framework.
- Received training from core GStreamer maintainers.
- Developed XMPP to SIP bridge, and debugged GStreamer/SIP Phone incompatibilities using WireShark.
- Wrote asynchronous networking/IPC code in C, for constrained Linux systems (Nokia N900).
- Buzzwords: Desktop Linux, Embedded Linux, VoIP, Python, C, GStreamer, GObject.

Education

University of Cambridge - Master of Engineering, Information Engineering - 2005 - 2009

- General foundation in all engineering disciplines.
- Specialised in signal processing, with a masters project in music visualisation.