

## Founder, A6 (January 2024 to Present)

Pre-commercial research in high-performance data compression, producing state-of-the-art results.

- **Integer Decoding:** Achieved 180 billion integers/second throughput, far surpassing FastPFor’s 7 billion.
- **Bitset Compression:** Achieved 7 bits per value, outperforming Roaring Bitsets (15 bits/value).

## Tech Lead, Thirdfort (July 2022 to January 2024)

Led a team of five engineers, initially focused on product development, and then on supporting other teams.

- **Anti-Money Laundering:** Developed product suite currently auditing ~40% of UK property transactions.
- **Operational Efficiency:** Reduced change lead time from 10 days to 4 hours, and change failure rate from 5% to 1%.

## Founder, Save The Universe (2020 to July 2022)

An exploratory research project, using novel methods to numerically simulate low-energy quantum fields.

## Tech Lead, Researcher (2019 to 2020)

News feed used by 400,000 scientists to stay up-to-date with research in their field.

- **Infrastructure Overhaul:** Redesigned systems, reducing annual spend from \$100,000 to \$40,000.
- **Machine Learning:** Trained article recommendation and ad targeting models, boosting CTR from 3% to 5%.

## Founder, Salamander (2018 to 2019)

Built a cloud platform used by 2,000 AI researchers to rent supercomputers.

- **Cost Optimisation:** Used strategic bidding on unused compute capacity to undercut competitor prices by 30%.
- **Successful Exit:** Acquired by renowned professor and ULMFiT inventor Jeremy Howard.

## Previous Roles

- **Software Engineer, Beyond (2016 to 2018):** Contributed to a budgeting tool for small and medium-sized enterprises.
- **Software Engineer, Movidiam (2014 to 2016):** Contributed to an end-to-end video production platform.

## Skills

I’ve worked with a wide range of technologies and can quickly adapt. If you don’t see a particular technology listed, please feel welcome to reach out regardless.

### Product & Applications

- **Frontend:** React (vanilla, Next.js, React Native), d3.js
- **Backend:** TypeScript (Node.js), Go, Python
- **Databases:** SQL (SQLite, PostgreSQL); NoSQL (MongoDB, Redis); Search (ElasticSearch)
- **DevOps:** IaC (Terraform, Pulumi); CI/CD (GitHub Actions, Buildkite); Observability (ELK, Grafana)
- **Edge:** CloudFlare (Workers, KV, Durable Objects, D1, R2), fly.io
- **Cloud Platforms:** AWS, GCP, vast.ai, Hetzner, OVH, Linode, Heroku, Vercel

### Data & AI

- **LLM Integration:** Prompt library curation, multi-step (DAG), high-context (RAG), Human-In-The-Loop
- **Machine Learning:** Python, Scikit-Learn, Spark.ml, XGBoost, PyTorch, NLTK
- **Data Engineering:** Storage (BigQuery, DuckDB, S3); Transport (Fivetran, Kafka); Transform (DBT, Spark, Pandas)

### High-Performance

- **Programming Languages:** ASM, C++, Rust
- **SIMD:** ARM (NEON, SVE), x86 (SSE, AVX2, AVX-512); LLVM IR (incl. custom optimisation passes)
- **SIMT:** CUDA (incl. PTX), GLSL (WebGL, Metal)

### Management & Leadership

- **People Management:** Clarifying vision, tailoring style to individuals, and recognizing achievements
- **Team Collaboration:** Team topologies, platform teams, multi-stakeholder coordination, soft power
- **Operational Excellence:** DORA metrics, product velocity, queue time, focus time