

Summary

Hands-on Engineering Leader with 10+ years of diversified experience and a passion for everything technical, ranging from real-time applications to cloud engineering.

Specialties: Full-stack architecture and implementation using TypeScript, React, Node.js, PostgreSQL and Kubernetes.

Career Highlights

- **Enabled the successful rewrite of a large trading application with a hard deadline.** The deadline was driven by Flash reaching end-of-life. I improved velocity, by modernizing processes and developing tooling, libraries and practices that enabled teams to work in a highly scalable manner. This allowed multiple teams (6-8 teams, 3-5 developers per team) to work independently yet benefit from code re-use, gradually producing 286 separate packages that composed the application.
- **Improved the scalability of development workflows within a large monorepo.** By implementing caching infrastructure we can avoid repeating work.
- **Enabled test workflows that might otherwise take hours to run, to run in under a minute.** By using the container-native workflow engine Argo, I was able to parallelise E2E tests on a Kubernetes cluster.
- **Setup a Data Engineering/Science Practice.** This included hiring a team from scratch, evaluating an original consultancies work, increasing the end-to-end performance of data pipelines by 4x, setting up quality control gates, and arranging training workshops on modern practices.

Selected Experience

JPMorgan Chase & Co.

Software Engineer / Architect

Aug '19 – Oct '20

- Advised on the technical direction of the group and provided solutions to difficult organisational problems.
- Created caching infrastructure to speed up CI. In one case, builds that previously took 19 minutes took 3 minutes.
- Helped with the upgrade of a large 50+ component library from v3 of Material UI to v4.
 - Introduced TypeScript.
 - Introduced visual regression testing.
 1. Auto-generated 100s of tests and then reduced the time these tests took to run from 25 minutes to 10 minutes by developing a codemod that automated rewriting 10,000s of lines of application code to use code-splitting techniques.
 2. Contributed to the open-source libraries 'cypress' and 'cypress-image-snapshot' and wrote cross-platform code and dockerized Cypress so that it could be used by engineers on Mac, Windows and Linux machines (to avoid image regression failures due to OS, browser, and font rendering differences).
 3. Used the container-native workflow engine Argo to parallelise the tests on a Kubernetes cluster. This effectively allowed test runs that would otherwise take hours, to run in under a minute.

Shell

Technical Lead

Dec '18 – Jun '19

- Laid the foundations of a Data Science/Engineering practice.
- Starting from zero, hired multiple Data Engineers and Data Scientists into the team (approximately 10 DE/DS). Established a streamlined hiring process for the future.
- Reviewed earlier work on the project by a consultancy, and created a plan on how to improve problem areas. Communicated the path forwards to both non-technical stakeholders and globally distributed technical team members. Centred power within a core DE/DS team that would oversee future quality, and setup weekly discussions for thoughtful collaboration and daily stand-ups to stay in sync.
- Prioritised the rapid build of a scalable data platform to enable the new development workflow. This caused the data pipeline to run end-to-end 4x faster.
- Helped the team to share their knowledge of modern software engineering practices. Together we created and taught training workshops to teach Data Scientists modern practices for collaborating towards high-quality models (Git, PRs, CI, etc). Outside of the workshops, we used shared repositories to document the onboarding process, how to use Git for collaboration, best practices in EDAs, etc.
- Tools: Azure, CircleCI, Docker, Helm, Jupyter, Kubernetes, Python, Spark Cluster, Written Word.

JPMorgan Chase & Co.

Application Engineer

Jun '17 – Dec '18

- Facilitated the high-scale software development of a complex realtime trading application built using TypeScript, React and Emotion.
- Improved the quality of the PR process by developing a Danger plugin that allowed rapid feedback of real work by automatically deploying sites and linking these to PRs.

- Evangelised a modern development process with high levels of modularity by demonstrating how to use Rollup and Babel 7 to create best-in-class packages that support CommonJS, ES modules and types.
- Improved integration by making an authenticated and declarative API for the loading and code-splitting of sub-applications.
- Used working code to teach best practices on higher-order components, render props, performance, hooks, etc.

YLD

Node.js Engineer

Jan '17 – Apr '17

- Code reviews and how-to guides.
- Implementation of 4 Node.js microservices and improved logging.

McKinsey & Company

Full-stack Engineer

Apr '16 – Dec '16

- Code reviews, mentoring, documentation and architecture.
- Implementation of a UI using React, Redux and D3.
- Wrote a number of open-source projects (e.g. [redux-saga-helpers](#) and [react-redux-wizard](#)).

The Economist

Full-stack Engineer

Sep '15 – Dec '15

- Developed [The World In 2016](#) in the open. Created an Express.js app and numerous reusable React components (e.g. [@economist/component-articletemplate](#)).

Home Office

Technical Lead

Jan '15 – Sep '15

- Rebuilt a legacy system into a set of 6 Node.js microservices and a React front-end authenticated with LDAP.

Red Badger

Node.js Consultant

Mar '14 – Jul '14

- Client hand-over and training on an application built with Node.js, RabbitMQ, React, Elasticsearch and Redis.

Hailo

JavaScript Engineer

Sep '13 – Jan '14

- Designed micro-frontend dashboards including the security screening process and real-time map of driver locations.

BIZZBY

Senior Node.js Engineer

Apr '13 – Jun '13

- Back-end engineering of RESTful API.

We R Interactive

Team Lead & Software Engineer

Oct '12 – Apr '13

- Led the development of a second-screen sport game built upon a real-time stream of real-world data.

Saffron Digital

Team Lead & Software Engineer

Feb '10 – Oct '12

- Roles included architect and team lead on the HTC Watch project, development of a new platform to orchestrate parallel encoding on AWS, a Netflix-style application for Samsung Connected TVs and set-top boxes, and significant input in re-engineering development processes as the company grew.

Please refer to [my full CV](#) or [my LinkedIn profile](#) for the complete history of work experiences.

Long Tail

- **Infrastructure:** Alpine Linux, Argo, AWS, Azure, Cassandra, CDN, CentOS, CircleCI, Docker, Elasticsearch, Git, Helm, Jenkins, Kong, Kubernetes, Lambda, MongoDB, MySQL, Neo4j, Nginx, PostgreSQL, RabbitMQ, Redis, RHEL, S3, SQLite.
- **Languages:** CSS, Golang, Graphviz, HTML, JavaScript, Python, Rust, Shell, Swift, TypeScript, WebAssembly.
- **Libraries:** Apollo, Babel, Celery, Emotion, ESLint, Expo, Express.js, Flask, GraphQL, Hapi.js, Jest, JWT, Koa.js, Lerna, PostCSS, React, React Native, Redux, Rollup, RxJS, Styled Components, Webpack, WebSockets, Yarn.

Education

Coursera

ONLINE

Machine Learning

Feb '16

Course Certificate, License E3XLGER56CQ3

University of Kent

CANTERBURY, UNITED KINGDOM

Bachelor's degree in Computer Science

2005 – 2009