

## Summary

Full-stack engineer, open-source contributor and autodidact with expertise in Node.js and React (12 and 9 years respectively).

**Technical specialties:** 12 factor back-ends; high-performance UIs; strongly-typed data; TypeScript, Python and SQL.

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## Experience

Freelancer, Consultant & Contractor

### Private Study

Apr '23 –

- Articles exploring algorithms, linear algebra, and an implementation of a neural network in Rust.

### Software Engineer at T. Rowe Price

Oct '20 – Mar '23

- Developed Playwright-based synthetic monitoring service to continuously run E2E tests against different environments and log and expose structured reports, screenshots, traces and videos.
- Rewrote a legacy React application into TypeScript while replacing the use of Redux as a cache layer, doubling the Lighthouse score from 50 to 98, and significantly improving the testability of grids and tables.
- Improved reliability of Python, Node and Kotlin services for data ingestion into S3/PostgreSQL and calculations.

### Software Architect at JPMorgan Chase & Co.

Aug '19 – Oct '20

- Re-hired into a newly formed Core UI Infrastructure team to provide tooling for high-scale development. Developed caching infrastructure for CI. Demonstrated Argo workflows that could run hours of tests in a few minutes.
- Worked on monorepos, codemods, visual regressions and automations to help with large, complex upgrades.

### Technical Lead at Shell

Dec '18 – Jun '19

- Brought-in by an ex-colleague to take the reigns on and bring in-house an under-performing data project. Hired a team of data scientists and data engineers and left a strong foundation for the future by creating a highly collaborative work environment that included weekly discussions and training workshops.
- As a team, we identified areas in the earlier consultancies work that needed improvement and established better practices around quality and communication, while also prioritising the rapid build of a data platform using Azure, Docker, Helm, Jupyter, Kubernetes, Python and Spark, that improved end-to-end pipeline performance by 4x.

### Application Engineer at JPMorgan Chase & Co.

Jun '17 – Dec '18

- Enabled the successful rewrite of a high-performance single-dealer platform trading UI in React and TypeScript.
- There was a hard deadline as the original application was written in Flash which was end-of-life. The application was complex but modular so I setup monorepo tooling and an RFC process so that several teams could work independently yet benefit from code re-use, gradually composing the application from over 200 packages.

### Consultant at YLD

Jan '17 – Apr '17

- Improved the logging and error handling of a shared framework by adding distributed tracing and error causes.
- Implemented 4 Node.js microservices while also supporting the team via the development of shared helpers to mock data during test execution and with documentation on how to migrate an SQLite database to MySQL.

### External Advisor at McKinsey & Company

Apr '16 – Dec '16

- Advised enterprise clients on software architecture, and conducted code reviews and training for their teams.
- Developed software to optimize energy and material usage within factories. This involved implementing algorithms for calculating costs and analyzing flows of energy, product, and waste through the system.

### Earlier Client Work

Apr '13 – Apr '16

- Technology leadership and rebuild of a legacy passport system into Node.js services at the Home Office.
- Development of a real-time animated map of driver locations for Hailo, an open-source analytics middleware for the Sequoia-backed startup Keen.IO, and a React website and component library for the Economist.

We R Interactive

### Lead Game Developer

Oct '12 – Apr '13

- Delivered MVP of an innovative second-screen social game utilizing Node.js, WebSockets and Cassandra.

Saffron Digital

### Lead Developer

Oct '10 – Oct '12

- First back-end engineer on the HTC Watch project, leading development until HTC's acquisition for \$48m.
  - Developed expertise in DRM, parallel video encoding, and payment services using Python and MySQL on AWS.
  - Developed an application for a Samsung Connected TV device with challenging hardware limitations.
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## Education

Coursera

### Machine Learning

Feb '16

Course Certificate, License E3XLGER56CQ3

University of Kent

### Bachelor's degree in Computer Science

2005 – 2009