Seb Insua *Engineering Lead & Consultant Engineer*

me@sebinsua.com • 07912303758 • github.com/sebinsua • sebinsua.com • twitter.com/sebinsua

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Summary

Consultant Engineer.

I learnt to program at the age of sixteen after discovering a flourishing homebrew community. Realising that self-taught amateurs could create products was inspiring to me. I'm still amazed by the work done by small empowered teams.

Over the years I've worked with many languages within many different environments. Nowadays I do a lot of commercial work in JavaScript due to its prevalence but in my spare time I like Rust due to its mixture of low-level and functional programming.

My engineering practices are influenced by: the twelve-factor app, a conservative attitude towards microservices, unit testing & TDD, a light sprinkle of functional programming, the Elm Architecture, and Simple Made Easy.

I specialise in combining technical knowledge with lateral thinking. I particularly like to advise on systems that maximise a businesses *technical leverage* while also reducing their exposure to *execution costs*.

Knowing when not to solve a problem is as important as knowing how to solve it.

Technical specialties: Full-stack software design and implementation. I follow the mantra *the right tool for the right job* and try to keep solutions as simple and common as possible.

Experience

Duplo Tech — London, United Kingdom / Remote
Freelancer — *Jun '13 – Present*

Freelancing, consulting and open-source activities.

- Banking for your command line. Written in Rust.
- Access Twitter data without an API key.
- Graphviz templates as visual configuration of Neo4j database insertions.

JPMorgan Chase Co. — London, United Kingdom
Architect — *Aug '19 – Feb '20*

JPMorgan Chase Co. is an American multinational banking and financial services holding company.

- Introduced visual regression testing.
  1. I auto-generated tests from pre-existing code.
  2. I made open-source contributions to the libraries 'cypress' and 'cypress-image-snapshot'.
  3. I reduced the time the tests took to run from 25 minutes to 10 minutes by writing a codemod that auotomated rewriting 10,000s of lines of code to use code-splitting techniques.
  4. I wrote cross-platform code and dockerized Cypress so that it could be used by engineers on Mac, Windows and Linux machines (otherwise image regressions break due to OS, browser, and font rendering differences).
  5. I 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.
- Introduced TypeScript into a large React project.
- Upgraded a large 50+ component library from v3 of Material UI to v4.

Shell — London, United Kingdom
Technical Lead — *Dec '18 – Jun '19*

Shell is one of the six oil and gas "supermajors" and the fifth-largest company in the world.

- Laid the foundations of a scalable 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.
- Established a continuous integration process to allow robust improvement of the data engineering and models. This was used to test and document the original code so that it would be understood by future team members.
- 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, and meant that data engineers could spend more time programming and less time waiting for pipelines to finish.
- 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

London, United Kingdom
Jun '17 – Dec '18

JPMorgan Chase Co. is an American multinational banking and financial services holding company.

- Helped to lay the foundations necessary for the high-scale software development of a complex realtime trading application built using TypeScript and React.
- Improved observability of software development by introducing a CI/CD environment that supports rapid feedback on real work by automatically deploying sites and posting comments into PRs linking to these.
- Improved modularity of software by demonstrating how to use Rollup and Babel 7 to create best-in-class packages that support CommonJS, ES modules and types.
- Improved encapsulation of development work 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, reducer components, performance implications, hooks, etc.
- Evangelised a modern development process leading to multiple teams across the company moving to Lerna monorepos.

YLD
Node.js Engineer

London, United Kingdom
Jan '17 – Apr '17

YLD is one of London's fastest growing software engineering consultancies.

- Code reviews. Troubleshooting framework issues. Implementation of 4 Node.js microservices.
- Created shared helpers to ensure a set of data exists during test execution.
- Improved the error handling and logging of an in-house microservices framework.
- Wrote a bit of documentation explaining the process of migration between SQLite and MySQL.

McKinsey & Company
Full-stack Engineer

Western Europe
Apr '16 – Dec '16

McKinsey & Company is a worldwide management consulting firm.

- Code reviews. Mentoring. Documentation. Architecture.
- D3. React. Redux. Node.js.
- Wrote a number of open-source projects (e.g. redux-saga-helpers and react-redux-wizard).

The Economist
Software Engineer

London, United Kingdom
Sep '15 – Dec '15

The Economist is an English-language weekly newspaper.

- React. ES6. Node.js.
- Numerous components (e.g. @economist/component-articletemplate) used in The World In 2016 project and potentially other projects.

Home Office
Technology Lead

London, United Kingdom
Jan '15 – Sep '15

The Home Office is a ministerial department of the Government of the United Kingdom, responsible for immigration, security, and law and order.

- Rebuilt a sprawling legacy system into 6 Node.js microservices harnessing infrastructure, services and libraries built for the Passport Exemplar project.
- 1 JWT Authentication API with LDAP as its backing service; 1 old-school Express.js front-end app; 1 single-page app built with React + Flux + ES6 (Babel); 2 RESTful Express.js APIs; and 1 command-line app to run tasks on the Postgres database.
- Gave strategic advice on the architecture of a new project, and later presented this plan at 'Show and Tell' to a wide range of people throughout the organisation.
- Created some early prototypes using Java 8 + Dropwizard + Swagger.

Red Badger
Node.JS Consultant

London, United Kingdom
Mar '14 – Jul '14

Red Badger is a creative software workshop.

- This was a client-facing role in which I provided training to an external team.
- Node.JS, RabbitMQ, Elasticsearch, Redis.

Hailo
JavaScript Engineer

London, United Kingdom
Sep '13 – Jan '14

Hailo is the evolution of the hail – a free smartphone app which puts people just two taps away from a licensed taxi, and lets cabbies get more passengers when they want them.

- Created a series of single-page dashboard apps. Conversations with internal customers helped me to come up with ideas on how to simplify business processes. For example a way of signing off groups of driver's profile changes was given a UX that defaulted to approval but forced the user to sign a receipt of the changes: this helps with speed while also ensuring accountability.
- Other components were created so that behaviour relating to presentation was well-separated from configuration and data input; or made so that they could be updated in real-time, for example: an animated map of driver locations.

BIZZBY

London, United Kingdom

Senior Node.JS Engineer *Apr '13 – Jun '13*
> *Bizzby is app your service to help you book a trusted local service in 30 seconds.*

We R Interactive LONDON, UNITED KINGDOM
Team Lead *Oct '12 – Apr '13*
> *We R Interactive blends the best of games, film and TV production to create social games that bring global audiences together around sport and music.*

- Designed and lead the creation of a back-end system to support a sport game as well as recruiting developers for my team.
- The system was decomposed into multiple services and stored data in Cassandra. I created a service which would automatically generate a series of questions from a stream of data and a template, a real-time market-outcome resolution service that would automatically resolve a series of previously generated questions depending on a simple DSL and a stream of real-life data, and a service that could have data pushed to or pulled from it and parse this data into a common format before feeding it into a message queue for deeper processing.
- Setup a continuous integration system using Jenkins, and used Puppet to automate deployment of some of the services to AWS.

Saffron Digital LONDON, UNITED KINGDOM
Team Lead *Oct '10 – Oct '12*
> *Saffron Digital is the global, market-leading provider of connected device video, DRM, advertising and platform services. Saffron Digital was acquired by HTC in 2011.*

- Architect on the HTC Watch project in which I later lead a team of five developers. Due to my early work on internationalisation and implementation of multiple payment services we were able to scale this up to 20 countries.
- Significant input in re-engineering development process as we moved from being a startup to a larger company. For example: an engineering culture; Git instead of SVN; continuous integration; modern deployment tools; etc.
- Architecture and development of a new platform based on understandings gleaned from previous services. Worked on service to orchestrate and configure encoders in order to run encodes in parallel on AWS.
- A client-side application for Samsung Connected TVs and set-top boxes written in object-orientated JavaScript.

PHP Developer *Feb '10 – Oct '10*
- A RESTful web service for FOX to support a fully localised Family Guy video streaming Android application. A CMS was also created as well as reporting tools to give the business metrics to measure activity.
- A web service for Paramount Studio s the League of Extraordinary Dancers iPhone app. This was interoperable with the iTunes video store in order to check receipts.

> *Please refer to my Linkedin profile for the complete list of work experiences along with recommendations.*

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*

Cranbrook School CRANBROOK, UNITED KINGDOM
GCSEs & A-Levels (secondary education) *2000 – 2005*

Interests

Design, Economics, Philosophy, Poetry.