

MATT BESSEY

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AREAS OF EXPERTISE

Systems Design
Domain Driven Design
Performance Optimisation
Developer Experience
SRE / Observability
Data Engineering
Design / UX

TECH SKILLS

EXPERT

Datadog
Docker
Git
GraphQL
JS
Kubernetes
MySQL
Ruby
Ruby on Rails
Sidekiq
RSpec

GOOD

AWS (EC2, RDS, EKS, S3,
CloudFront, EventBridge)
Looker / LookML
Python
React
Redux
Sass
Terraform
Twilio
TypeScript

PAST / LIMITED

C / C++
C#
Elixir
Haskell
Java
OIDC / OAuth2

WHO I AM

I am a Bristol, UK based Principal Engineer with a broad knowledge of frontend, backend, and infrastructural technology, specialising in Ruby on Rails as an API.

I spent 3 years early in my career working at a tech startup in Silicon Valley, living with others in similar positions at other startups. That immersion in the Bay Area tech scene was a formative experience for me, and helped me gain the broad base of systems knowledge I rely on to this day.

I take pleasure not only in delivering features to users, but also building internal tooling to accelerate my peers. I excel at reasoning about large systems spanning these disciplines, then deep diving into specific technical problems within them. I am a friendly extrovert with strong written and spoken communication skills, comfortable collaborating with technical and non-technical stakeholders alike.

EXPERIENCE

(2019 — Present) **Principal Engineer**, [Immersive Labs](#) Bristol, UK

I am the most senior individual contributor in a department of ~50 engineers. My responsibilities have included:

- Defining the long term strategy of the engineering department, by identifying the most pressing technical problems we are facing or expect to face.
- Leading Engineering OKRs initiatives to progress that strategy, coordinating work towards them across all teams.
- Performing engineering due diligence on potential acquisitions.
- Establishing and leading the SRE and Developer Experience guilds, as well as being a major contributor to the Test Automation and Performance guilds.
- Founding and leading the Platform Team, responsible for ensuring the reliability and scalability of the entire platform, as well as improving DX for all engineers.
- Assisting product teams to solve complex technical problems in a consultant capacity.

Specific projects of note, which I have been I have been a major contributor to:

- Transitioned our frontend's authentication system off of custom JWT + LocalStorage and onto vanilla Rails HttpOnly encrypted session cookies, reducing complexity while enhancing security by reducing the impact potential of XSS attacks.
- Oversaw the transition of regular hours on-call duty from a department wide rota, to one where each product team is responsible for monitoring of their products via SLOs, monitors, dashboards, and in-team error reporting. Achieving this was particularly challenging as most teams work within a single Rails monolith.
- Researched and integrated a lightweight self hosted OIDC / OAuth2 solution to enable users of an acquired product to have a seamless login experience across the Immersive Labs platform. My research lead me to ORY Hydra, a minimalist micro-service which allowed us to rapidly extend our existing Rails login system with well documented OIDC capabilities. Significantly reduced effort and risk vs migrating to a 3rd party identity provider or implementing a custom authentication solution.
- Worked with Engineering Management to design and implement a code review based interview exercise for Senior / Lead / Principal backend engineers. I focussed on building a PR with many flaws of varying severity, in a small codebase that acted as a microcosm of our own. This enables candidates to demonstrate meaningful skills to the role they applied for.
- Architected Rails application changes necessary to support US / EU customer data sovereignty, while still maintaining a sub-set of global data. We replicate cybersecurity content from our primary region to replica regions via an AWS EventBridge powered global event-bus.
- Doubled our Rails monolith's RPS per process in a quarter, through identifying suboptimal Kubernetes configuration, and coordinating optimisation across teams.

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- Relentlessly simplified the developer experience for all engineers so that regardless of the service you're working on, `git pull`; `./script/update`; `docker compose up` will reliably get you an up to date and functioning development environment.
- Gathered requirements for, then architected and implemented a low maintenance ELT data pipeline built with state of the art technologies including Looker, dbt, and Snowflake. I ran a proof of concept trial comparing several vendors, and assessing the performance of each with respect to the data analysts' and business's needs. Our Data Team's size has grown 5x building on this foundation.
- Introduced Domain Driven Design patterns to gradually refactor our Rails monolith into cohesive domain oriented components with clear public APIs, gaining the de-coupling benefits of micro-services without the operational overheads associated.
- Worked in a cross discipline team to improve the reliability of our Kubernetes remote desktop orchestration system. This required collaboration between Engineering, Infra, and Cyber Content. I led the overhauling of our Datadog powered monitoring system in the wake of a major outage to identify precisely what went wrong, and enable all departments to make necessary changes to avoid recurrence.
- Influenced the design and best practices of an early stage GraphQL API, drawing from previous experience to develop a performant, secure, and stable API that today is used for all new API requests.

(2013 — 2019) **Senior Software Engineer, Caring.com** San Mateo, California

- Designed and maintained for 2+ years a GraphQL API for our core Rails monolith, that received ~850k requests per day and was the primary API for the majority of clients. Maintenance has included instrumenting with APM software to identify and rectify performance pitfalls from memory over-allocation, N+1 SQL queries, and I/O parallelism opportunities.
- Worked in a team of 3 to replace off the shelf call centre software with poor uptime with an entirely in-browser Twilio powered Rails application used daily by ~100 sales staff, all remotely, from all over the US and the Philippines. The application was developed and launched in under 6 months, quickly proved more stable than the commercially available product it replaced, and was still used largely unchanged 4+ years later.
- Developed an Airbnb style realtime map based search experience for senior care, using server-side rendered React inlined into Rails templates to allow for rich interactivity without affecting SEO or initial page load time.
- Provided much highly valued input to product managers on the design of future product developments, informing the direction of our core products, and helping to bring entirely new revenue streams to the business in a timely manner.

OPEN SOURCE CONTRIBUTIONS (GITHUB)

brillo - ActiveRecord based developer database scrubber and loader gem

vscode-rufo - VS Code extension to provide support for rufo, the Ruby formatter

EDUCATION

(2010 — 13) University of Bristol, **Computer Science BSc with 1st class honours**

The programme was primarily practical and took a "bottom up" approach. Highlights:

1st year: Computer Architecture. Programming paradigms via C, Java, and Haskell.

2nd year: Databases, Concurrency, Data Structures & Algorithms, Signal Processing.

3rd year: Cryptography, Machine Learning, High Performance Computing.