Jonathan Bates

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I am a seasoned developer who treats projects as business problems instead of technical ones. My interests orient towards high-throughput, high-resilience distributed systems, incorporating monitoring, alerting and observability tools. However, I will happily champion “boring” solutions that will solve a problem pragmatically over those which may be more interesting. I’ll also document most things, because documentation’s return on investment seems to be huge.

# Employment Details

April 2022 – July 2022 – Senior Developer, DELLI

A pre-series-A start-up trying to "recreate Borough Market online", which was unable to secure additional funding

* The backend consisted of Kubernetes-hosted dot net core 6 services (in Azure AKS) and leveraged a number of Azure products, including Service Bus, EventHubs & AppInsights. All infrastructure was scripted using Bicep
* Created an analytics platform to capture and report upon core business metrics. Metrics were captured at various points in the system, and published to an Azure EventHub before being recorded asynchronously. The system used Grafana to present data, and was built to be as simple and cheap to implement as possible, whilst being suitable for the next few years projected growth.
* Implemented a geospatial query backend to surface locally-relevant content to users
* Mentoring other team members, with a focus on avoiding resiliency and avoiding over-engineering
* Translating between technical and non-technical teams. E.g. working with the marketing team to convert their reporting aspirations into executable queries and also distilling complex technical concepts into an understandable format when presenting to the board

September 2020 - April 2022 – Senior Developer, Bumble

Worked as part of a cross-functional team created to invigorate Bumble’s technical stack (100% PHP monolith as of joining) and build a globally-distributed social network (not currently launched in the UK)

* Implemented as Kubernetes-hosted services, written in Kotlin, and using gRPC, Kafka & and sharded databases
* Developed communication contracts with external teams & mobile developers to ensure interoperability
* Created various levels of Kotlin-based testing, as well as end-to-end mobile test automation using Ruby + Calabash
* We were heavily reliant on Mountebank to mock external services, so I built a type-safe, fluent Kotlin DSL for configuring it
* Used a little Golang & PHP occasionally to work on external systems unblock my team
* Built out the Kotlin teams’ CI & CD pipelines using ArgoCD, Helm & Teamcity scripting. An example output was a bumble-centric helm chart that supported almost all deployment scenarios, but greatly reduced the Kubernetes learning curve whilst building in safety, e.g. rack-awareness and automatic JVM memory configuration
* Various other infrastructure projects, e.g. Vault & Prometheus integrations

July 2016 – August 2020 – Senior Developer, Zopa

I was part of the Financial Services & integration team – a core backend team responsible for developing a financial transaction model of the company to act as the source of truth for all of Zopa Bank’s transactions. It is one of the most mission-critical pieces of engineering in the company, integrating with numerous upstream and downstream systems (from end-user products to the GL & reconciliation systems). The team’s focus has been on reliability & durability of this system which contrasts with many of the other squads in the company.

* Distributed system, with components based around Kafka-Streams & Kotlin, integrating with Redis, Aurora, MSSQL & S3
* All logic covered with automated tests at various levels, including unit, integration & BDD tests
* Prometheus & AlertManager for monitoring, Grafana for dashboards
* Integrated OpenTracing (Jaeger) through a number of system components
* Risk & failure-modelling work to ensure our system could tolerate increasingly severe infrastructure failures
* Helping product teams to model and validate financial transactions (in terms of the product domain as well as how they’d be represented in the company ledger)
* Actively mentoring junior members of the team to look for opportunities to improve (not just code expertise)

Previously:

* Created a C# microservice to sync user data with SalesForce, integrating with the monolith via RabbitMQ
* Created a C# rest-based microservice to allow upstream products to interact with the GL. Made heavy use of OpenAPI and HATEOAS

Achievements

* Created a well-received binary format for storing Kafka records to S3. A modest container managed to sustain a recovery rate of ~50k messages per second to a recovery topic. This was a Kafka-Connect based solution that predated the mainstream S3 plugin
* Moved our stack to a helm-charts deployment, creating helm charts used by others
* First in the company to migrate a .NET 4 windows Service to a k8s-based netcore2 service, making it container-oriented, suitable for k8s deployment
* Created the first docker-compose testing stack, which incorporated MSSQL so as not to rely on a shared db
  + All integration & BDD tests run against containerised instances of actual dependencies
* Wrote a simple Go-based CI app to deploy multiple services at the same time (before we used helm charts)
* Created one of Zopa’s only open-source libraries - <https://github.com/zopaUK/Zopa.ServiceDiagnostics>

Jan 2013 – July 2016 – Senior Developer, JustGiving

Responsibilities

* Full-stack development on a site that typically has 3000 concurrent visitors, with an 800GB OLTP dataset
* Part of the FinTech team, who are responsible for all payment processing, using **C#6**, **ASP.Net WebAPI, Event-Sourcing** (using EventStore), **Swagger**
* Seconded to the FinTech’s front-end team, responsible for creating the new donation checkout using R**eact**/**Redux, ECMAScript 2016, Webpack, Karma, Mocha**
* Coordinating with project-managers, UI & UX specialists and front-end developers in a cross-functional team
* Creating testable, robust code in an agile environment for continuous deployment following **SOLID** principles
* Maintaining and extending automated test-coverage around the core system

Oct 2005-Jan 2013 – Analyst Developer, ILLY Computer Systems Ltd

Responsibilities

* Designing and developing a market-leading drug-rehabilitation application, with each instance storing typically 10GB data, and supporting up to 1000 concurrent users, whilst maintaining performance
* Designing client-side & server-side frameworks to be used by other developers
* Converting a monolithic web application into an **SOA**-based distributed architecture
* Public-facing project lead for other projects, including new and existing systems
* Variously managing full development lifecycle, from capturing client requirements, development, management of additional programming & testing resources and managing the release process.

# Education

2001 – 2005 University of East Anglia - BSC (2:1) & MSc (distinction) in Advanced Computing Science  
1994 – 2001 Westcliff High School for Boys - 10 GCSEs (A\* - C), 4 A-levels (B - D)