Jonathan Bates

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I am an experienced, well rounded developer who combines whole-system-level, human and domain-oriented thinking to projects. I am a strong advocate of agile & clean-programming practices, including constant backlog grooming & prioritisation, TDD, BDD, XP & Kanban. My interests orient towards architecting and implementing high-throughput, high-resilience cloud-native distributed systems, incorporating monitoring, alerting and observability tools.

# Employment Details

July 2016 – Present – Senior Developer, Zopa

For the last 2 years, I have been 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 faiures
* 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, donation-collection-api development, using **C#6**, **ASP.Net WebAPI, Event-Sourcing** (using EventStore), **Swagger**
* Seconded to the FinTech 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
* Development and maintenance of other services using **Dapper**, **NHibernate, Sql Server**, **Git**, windows-services with **Nancy FX** front-ends, **log4net, Rest#, API, Moq, Ninject, AngularJS** and **React/Redux**
* Upgrading the inter-service communication from MSMQ to **RabbitMQ**/**Brighter**
* Removing technical debt from the mature system where it is safe to do so

Achievements

* Created and ran a 6-week programming course for my non-technical colleagues, with a waiting-list of 55 students, from support staff & product managers to the CEO
* Part of the core team tasked with breaking up the monolithic system into **AWS**-based microservices
* Created an **EventStore** subscription library <https://github.com/JustGiving/JustGiving.EventStore.Http>
  + Warning – I don’t agree with this approach now – EventStore is not a queue but now I know better

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

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
* Application Development using **C#**, **Monorail** (a .Net MVC web framework), **NHibernate 3**, **Linq**, **SOA** (using **NServiceBus** & **MSMQ**), **SQL Server**, **Resharper, NUnit, Windsor** (IoC framework), **Git, jQuery**, **Knockout, CSS**
* Designing client-side & server-side frameworks to be used by other developers
* Converting a monolithic web application into an **SOA**-based distributed architecture
* Deputy manager of development pool (6 developers in total)
* 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

Sep 2001-Sep 2005 – BSC (2:1) & MSc (distinction) in Advanced Computing Science, University of East Anglia

* Dissertation project based on context-aware mobile information-service infrastructure; a generic, self-configuring information-broker for mobile devices, which combined simplicity of use with an extensible array of intelligent information services e.g. weather, stock quotes and proximity alerts. (77%)
* Other units included Speech & Natural Language Processing, Information Retrieval, Systems Engineering and Analysis & Design.

Other Education

* 1994 –2001 – Westcliff High School for Boys - 10 GCSEs – A\* - C, 4 A-levels, B - D