

Sam O'Brien

Software Engineering Contractor

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Summary

Senior software engineer & team lead available on contract, focused on people oriented processes, technical innovation & excellence, horizontally scalable solutions in micro-service cloud architecture, best practices, and continuous improvement following the [Kaizen](#) principle.

Experience includes working at two SAAS startups that were eventually acquired, the perfect crucible for ambitious and talented developers.

Professional Experience

Technical Lead Contractor

2020 - Present

Hertz

This is a software engineering & technical lead role on an innovative telemetry project for Hertz.

It is a serverless AWS solution using the latest Amazon CDK (Cloud Development Kit) implemented in python & typescript.

This role involves software engineering, but also process design around the new technologies in use, which are new to Hertz. My experience in multiple agile companies as a dev & lead allows me to tackle this new process effectively, with a full CI-CD pipeline leveraging CDK with unit, integration & acceptance test coverage of the whole distributed system.

Software Engineering Contractor

2019 - 2019

[Boxever](#)

Senior software engineer responsible for designing & developing a live analytics solution using kafka streams, cassandra & dropwizard in a high throughput event driven eco-system.

This included operations work to upgrade the live kafka cluster, developing an internal library to leverage kafka streams, developing dev & testing tools for the team, test automation, monitoring, alerts and load testing the solution.

This solution is a bespoke time-series analytics solution with an expected throughput of some 20,000 messages per second for which I am the primary developer & designer. This solution is horizontally scalable, fault tolerant and blisteringly fast.

Features include bloom filters on ingested messages, hyper log log plus probabilistic and deterministic counting and abstracted persistence and retrieval at arbitrary granularity. Includes monitoring dashboards & alerting on system performance and throughput.

Such a bespoke piece of software raises the technical barrier to entry to business rivals and is a strong value proposition for a startup increasing annual revenue and considering eventual acquisition.

Principal Software Engineer for Data & Integrations

2015 - 2019

[VSware/Visma InSchool](#)

Senior software engineer with principal developer, team-lead and development responsibilities.

I also worked 100% remotely from Australia for one year while successfully attending meetings, managing a team and navigating several major delivery milestones.

- Principal developer for several critical & revenue generating services in the application including:
 - Principal developer for all integrations with 3rd parties on a national scale project including designing horizontally scalable scheduled & event driven functionality.
 - Developed metrics and insights for monitoring distributed systems
 - A major piece of employee planning and cost management software developed with a team of 5 as principal developer.
 - A revenue generating event driven asynchronous and eventually consistent micro-service based integration with Microsoft Active Directory and Office 365 with yearly subscription fee of 1-2k per customer depending on features.
 - In house PDF generator that consumes json and produces PDFs based on the flying-saucer library
 - javascript recursive parser & lexer library for the front-end

- Worked with stakeholders as the Visma development representative in a high pressure environment to deliver integrations with multiple 3rd parties developing features simultaneously with numerous technical and political complexities in play
- Worked as a normal senior developer in conjunction with other teams when needed.
- Responsible for all 3rd party integrations including Oauth and SAML 2.0 authenticated single sign on, and secure data sharing with 3rd party providers.
- Helped develop test automation & continuous delivery pipelines and processes back by Jenkins.
- Pushed proper REST and abstract controller patterns that are widely adopted by the team with correct exception handling.
- Pushed new validation, domain design and development patterns & improvements which were widely adopted by the development team.
- Pushed new hierarchical caching strategies and performance improvements in the Spring layer.
- Pushed improved database design to benefit from natural cardinality with proper indexing and constraints.

Software Engineer

2014 - 2015

Logentries

Developer focused on backend services including developing the in-house query language, metrics retrieval, validated REST API exposure etc. in an Agile environment

- Added named capture group support to the first java based re2 library
- Produced a high quality validated and acceptance tested externally exposed API

Team coordinator

2011 - 2012

Farm from a Box

Coordinating a team of 7 volunteers to produce an initial set of designs for a modular farming solution for disaster relief.

Earlier Experience

2007 - 2010

Various Organizations

3d Architects & Flanagan Architects

- Work included producing planning permission and other legal applications, design and technical documentation to strict legal and design requirements.

Core Competencies

- Typescript, Python, Bash
- NPM, Pip, Pipenv, Virtualenv
- Java & JVM based languages
- Spring, Spring-boot, Dropwizard, Play framework
- Inversion of control, Guice, Spring beans
- Distributed, Asynchronous, event driven applications
- Kafka, Kafka Streams, Akka, SQS etc.
- Maven, SBT, Yarn, Gulp, NPM, AWS, Docker, Chef
- REST, SOAP, SAML, OAUTH 2.0
- Javascript, Rivets, Vue, JQuery, Ajax
- TDD/BDD with Junit, Scala test, Cucumber
- AWS Cloud Development Kit (CDK)
- Jenkins
- Test automation, SoapUI, Postman, Cucumber
- Probabilistic big data algorithms, Bloom Filters, Hyper Log Log, Suffix tries etc.
- Relational database design, normalisation & natural cardinality
- NoSQL database design & optimisation
- Liquibase & Flyway DB migration
- MySQL, JPA, Hibernate, Cassandra etc.
- Empathetic leadership & team membership, enthusiasm and attention to detail
- Organisation & time management techniques (GTD David Allen)
- Data-structures, algorithms, parsers, lexers & parser generators
- Spark, Big Data & Machine learning
- Any interesting computer science concepts

Education

M.Sc Computer Science - 1.1

2012 - 2014

University College Dublin

Included Database design, Software Engineering, Natural language processing & Search aggregation and N-Dimensional clustering.

GPA 4.0

B.Sc Architectural Science

2006 - 2010

[University College Dublin](#)

Formal training in the design process, personal time management and productivity across a range of disciplines.

References

- available on request