

# Peter East Cambridge based Senior Software Engineer looking to build high quality technologies that make the world a better place.

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## Solutions Architect

Proven track record of independently analysing problems, designing and delivering technical and process solutions to problems across the business landscape.

I've used a variety of tools to do this, including hybrid cloud (AWS) and on-prem infrastructure, with a focus on using robust messaging systems, such as AWS EventBridge and Enterprise Integration Patterns.

## Quality Focussed

Extensive experience of multi-tiered automated testing to ensure quality in production, and we achieved a very low production defect rate.

Spearheaded ongoing effort to improve observability and debug-ability using Sentry and AWS CloudWatch metrics.

## Mentor and Leader

Worked closely with junior developers to help guide them to understand complex problems and create their own solutions in a team environment.

## Professional Experience

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### Cyted Senior Software Engineer, July 2020 → Present

I was a founding member of the tech and product team at Cyted, giving me the unique opportunity to work directly with C level members of staff and to play a key part in growing the team and building processes. I am immensely proud of the maturity and capabilities this team has today.

As a founding member, I implemented key SDLC processes in the team including code review, Kanban (and later Scrum) project management, CI and CD and automated testing. I took responsibility for key technology and architecture decisions including our language and tooling, cloud deployments and testing and QA strategy.

I interviewed and hired, then mentored numerous junior developers as they joined the company and helped them grow into highly productive members of the team.

### Key Projects and Responsibilities

#### US Molecular Pipeline – Kotlin, Go, React (TypeScript), Nix, AWS, Terraform, Nextflow, On-Prem (Linux)

In support of the company's entry to the US market, I was tasked with building out a production-ready pipeline that supports a multi-region deployment. I used Nix and Docker to create a set of frozen assets which I ran in the US using AWS ECS. I then extended the project by building a UI control panel that enables other teams to run workloads at scale without intervention from the tech team.

I worked with Cyted's R&D team to understand and help optimise key parts of their bioinformatics workload, a notable example uses multi-threaded Rust code to perform analysis on datasets orders of magnitude more quickly than the status quo. I also led the R&D team's transition away from AWS SageMaker to use on-prem infrastructure saving approximately £250k per year.

#### Machine Vision ML Training Optimisations – Python, PyTorch, Shapely

I supported the company's machine vision function by optimising PyTorch dataset creation logic by using an Rtree to dramatically reduce overhead when labelling training data for segmentation models.

#### Slidex – Kotlin, Android, Windows, Apache Camel, HL7v2

I supported the product function in investigating different ways of managing files in Cyted's laboratory, including developing a prototype Android app, guiding key integration decisions and ultimately building key infrastructure components.

## Software Engineer

Strong programming ability and understanding of computer science fundamentals to build excellent software.

Experience of building and maintaining production systems in Rust, Kotlin and Typescript (Node.js and React).

Experience of high and low level languages and a variety of paradigms, including functional programming and OO (including SOLID design patterns)

## Process Driven

Comprehensive experience of working in an Agile environment using Scrum. Led the adoption and iteration of SDLC processes, including Kanban, stand-up meetings, code review and CI/CD in growing software teams.

I am able to adapt to how the process's requirements change as the team and software scale up.

### **Platform Data System** – Kotlin, React (TypeScript), AWS, Postgres, Terraform

I led the design and implementation of Cyted's centralised data platform for all capsule-sponge cases processed by Cyted, including the initial discovery and prototyping phase to validate the idea with stakeholders. The system facilitates initial collection of data, communication between business units and delivery of results to customers. I designed the system with strong versioning semantics that have enabled first-class auditing and QA for diagnostic results while integrating with legacy systems.

### **NHS Scotland Integration** – Rust, Kotlin, AWS, Postgres, Terraform

Worked with external stakeholders to build a production ready, bi-directional data integration between Cyted and NHS Scotland. At the end of this project the back-end services had achieved 99.99% availability.

### **Logistics and Tracking App** – Rust, React, Typescript, AWS, Postgres, Terraform

First fullstack project at Cyted. Built a system to track incoming and outgoing samples to Cyted's newly acquired lab using AWS, Rust, terraform and Postgres. I was responsible for stakeholder and release management and project planning largely independently.

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### **Zeit.dev (now Ahoy.agency)** Software Engineer, Sept 2019 → July 2020

Frontend project ship maintenance manager, built using offline-first Elm.

Automated advertising platform, responsible for maintaining a service for integrating with Facebook, built using Postgres, Apache Thrift and Ruby.

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### **eLife Sciences** Software Developer (Placement), April 2019 → Sept 2019

Part of the "Libero Reviewer" team, responsible for building part of eLife's open source web-based publishing platform.

Development under a cloud-agnostic and highly available architecture using tools including RabbitMQ, etcd and docker to create a system deployable in a wide variety of environments.

Followed a LEAN development lifecycle to build features incrementally and collaboratively.

Responsible for introducing and leading an organisation-wide transition to TypeScript from JavaScript.

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### **Repositive** Junior Web Developer (Placement), June 2018 → April 2019

Maintained Repositive's Cancer Models Platform (CMP) using microservices, Elasticsearch, Typescript, Node.js deployed on GCP using Docker and Kubernetes. I also maintained internal libraries, including a major revision of the CQRS EventSourcing library used by all services for communication and data storage.

Built prototypes independently including user-to-user messaging service, graph-database backed search subsystem, prototype services in Rust.

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### **ARU** Data Entry Clerk, Summer 2016 and Summer 2017

I assisted with a digital learning transformation project in ARU's nursing department, this involved migrating learning materials into the new digital-first format and supporting students and members of the faculty in taking part in the project.

As part of this I proactively launched an electronic online help-desk and ticketing systems which dramatically streamlined the support process for the project team and students.

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### **Degree & Qualifications**

2:1 in Computer Science BSc (including placement year) from the University of Essex – Graduated in 2020

### **Interests outside of work**

Distributed systems – Interested in consensus algorithms (especially Raft), networking and messaging systems.

Cambridge Rust Meetup – Regular attendee and contributor, including giving the occasional talk.

Hobbyist Photographer – I enjoy taking and editing photographs.

*References are available upon request.*