

Tim Richardson

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SUMMARY

Senior Software Engineer and Engineering Manager with 13+ years of experience building scalable data platforms, specialising in genomics and healthcare. Currently leading AI transformation initiatives and managing engineering teams at Genomics England. Strong track record delivering full-stack solutions across Python, Go, and cloud infrastructure, with deep expertise in bioinformatics pipelines and ML integration.

TECHNICAL SKILLS

Languages: Python, Go, TypeScript, JavaScript, SQL
AI/ML: LLMs, RAG, LangChain, OpenAI API, Google ADK, NumPy, SciPy, Pandas
Backend: FastAPI, Django, Node.js, GraphQL, REST APIs, Microservices
Frontend: React, Next.js, Redux, D3.js
Data: PostgreSQL, Elasticsearch, Redis, Vector Databases
Cloud & Infrastructure: AWS, GCP, Docker, Kubernetes, Terraform, CI/CD
Bioinformatics: Nextflow, nf-core, VEP, Samtools, BWA, Singularity, LSF

EXPERIENCE

Genomics England	London, UK
<i>Senior Software Engineer and Performance Development Lead</i>	Dec 2021 – Present

- **Engineering Leadership:** Line Manager for 6 direct reports, responsible for mentorship, performance management, and delivery oversight.
- **Workflow Modernisation:** Key role in migrating complex workflow orchestration systems to Nextflow, improving scalability and reproducibility.
- **AI Transformation:** Leading internal initiative to introduce and operationalize AI coding assistants across engineering, driving efficiency.
- **Backend Development:** Architecting and maintaining robust backend services using Python and AWS for high-throughput genomic data processing.

IQVIA	London, UK
<i>Senior Software Engineer - AI/ML Team</i>	Mar 2019 – Dec 2021
<i>Stack: go, fastapi, typescript, reactjs, redux, elasticsearch, postgresql, d3.js</i>	

- **Full-Stack Development:** Built data analytics product for real-world healthcare data, developing backend services in Go and frontend in React.
- **AI Model Deployment:** Deployed machine learning models using FastAPI, enabling scalable inference for healthcare analytics.
- **Statistical Features:** Developed and implemented statistical features for the analytics product, enhancing data insights capabilities.
- Coordinating releases, product development, process improvement, code review.

Project Shivom	London, UK
<i>Lead Developer</i>	Oct 2018 – Mar 2019
<i>Stack: blockchain, smartcontracts, google-genomics, google-cloud-build, postgresql, graphql, react-apollo</i>	

- Design, development, and deployment of a genomic data sharing solution with blockchain components.
- Managed development team, created wireframes, developed backend services (REST APIs) and React SPA frontend.
- Deployed using Docker and App Engine.

Polecat	London, UK
<i>Python Contractor</i>	Jul 2018 – Oct 2018

Stack: django, django-rest-framework, graphene-python, reactjs, elasticsearch, postgresql, plotly

- Built a Python reporting service to generate PowerPoint marketing reports.
- Engaged with technical teams and product managers to produce software specifications and wireframes.
- Solution built using Python, Django, GraphQL, React, Elasticsearch, and Plotly.js.

Congenica

Hinxton, UK

Senior Frontend Developer (React)

Mar 2016 – Jul 2018

Stack: perl, reactjs, react-router, redux, reactive-programming, bioperl

- Developed new and optimised existing features for clinical genomics tool using Perl APIs and React frontend.
- Focused on optimal data flow for data-intensive UI.
- Led development of an API to integrate Congenica's Sapientia platform with Genomics England's 100k genomes project.

Repositive Ltd

London, UK

Lead Developer

Nov 2014 – Mar 2016

Stack: docker, node.js, ansible, ember.js, git, agile, postgresql, elasticsearch

- Led development of a genomic data discovery platform, including infrastructure and development processes.
- Developed web app architecture based on Node.js Express API using Redis, Postgres, and Elasticsearch.
- Built UI as an Ember.js single-page application.

Wolfson Institute for Biomedical Research

London, UK

Freelance Bioinformatics Project

Oct 2014 – Nov 2014

- Analyzed ChIP-SEQ project: trimming and QC, peak calling, motif discovery, GO annotation.

Fire Tech Camp

London, UK

Instructor

Jun 2014 – Aug 2014

- Taught Python programming to children aged 11-15.

Ixxy

Brighton/Remote

Django Developer

Mar 2013 – May 2014

- Built and maintained sites based on Django/Python CMS system.

Ecomarket.com

London, UK

Django Developer

Jan 2013 – Mar 2013

- Backend developer for an online marketplace using Django, Python, and PostgreSQL.

Swerve Concepts

London, UK

Junior Software Developer

Feb 2011 – Jan 2013

- Full stack developer using Python and PHP frameworks. Developed cloud-based products Swerve Media Hub and SignUpAnywhere.

PROJECTS & INTERESTS

hansard (github.com/timini/hansard)

Analysis of the hansard archive materials. Uses Jupyter, Django REST, Ember.js, Docker, Kubernetes.

chromo9 (github.com/timini/chromo9)

Biocomputing II project using Perl.

keyzen (github.com/timini/keyzen)

A touch typing trainer geared towards programmers.

rewire.it (rewire.it)

Personal blog on software engineering, genomics, and technology.

EDUCATION

Birkbeck, University of London

MSc Bioinformatics & Systems Biology (Merit)

London, UK

Sep 2012 – Sep 2014

- Studied statistics, protein structure, sequence alignment, systems biology, and software development.
- Thesis: Tracing human migration using MCMC methods for population clustering with dense genotype data.

Leeds University

BSc Cognitive Science (Hons)

Leeds, UK

Sep 2005 – Sep 2008

- Interdisciplinary course covering computing, psychology, and philosophy.
- Dissertation: Data mining techniques for dynamic data sets.