

# RONNIE KIYEGGA

(+44) 7775633768 • <https://www.ronniekiyegga.com/> • London, UK

Ronniekiyegga@hotmail.com • <https://github.com/BlissfulCoda> • [Linkedin.com/in/ronniekiyegga](https://www.linkedin.com/in/ronniekiyegga)

Software Engineer with **5+** years of experience specialising in frontend design engineering, building high-performance, scalable UI systems in **React**, **Next.js**, and **TypeScript**. Delivered full-stack EdTech and SaaS platforms with **Node.js** and **Python** backends, containerised with **Docker** and shipped via automated **CI/CD** pipelines. Dedicated to leveraging cutting-edge technologies to deliver innovative cloud solutions and technical excellence.

## SKILLS

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**Programming Languages:** TypeScript, Python, Node.js, React.js, Next.js  
**Data & Systems:** PostgreSQL, MongoDB, BigQuery, SQL  
**Tools & Infrastructure:** Git, Docker, Nginx, CI/CD, Redis, Sentry, Arcjet  
**Design & Additional Skills:** Figma, RESTful APIs, Agile Methodologies

## EXPERIENCE

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### Software Engineer (Education Systems)

Aug 2023 – Jan 2026

The School of Research Science - Dubai, UAE

- Architected and delivered a suite of internal EdTech tools, including real-time analytics dashboards, ML-driven assessment pipelines, and live feedback systems serving 1,200+ students and staff across the school
- Engineered production-grade UI systems in **React**, **Next.js**, and **TypeScript**, implementing **Server-Sent Events** (SSE) as a controlled alternative to WebSockets for real-time client-server data streaming, reducing connection overhead and improving reliability.
- Implemented production UI systems in React, Next.js, and TypeScript using server-sent events over websockets for controlled real-time client-server updates.
- Designed data-driven assessment workflows for targeted interventions; >70% of Year 11 cohort achieved Grade 7+.

### Design Engineer Consultant

Jun 2020 – Feb 2023

Freelance, London, UK | Jun 2020 – Feb 2023

- Designed and engineered 8+ full-stack web applications for SaaS and service-sector clients, leading the full product lifecycle from **Figma** design systems and component libraries through to containerised production deployments on **cloud infrastructure**.

### Software Engineering Intern

Adaptive Financial Consulting - London, UK | Aug 2019 – Dec 2019

- Developed React-based dashboards and internal analytics tooling supporting three product teams and senior stakeholders.
- Built React-based analytics dashboards and internal reporting tooling used by 3 product teams and C-suite stakeholders, reducing manual reporting time by consolidating data from multiple sources into a single interface.

## PROJECTS

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### EduFeedbackPro - Analytics Platform (B2B SAAS)

Skills: **Next.js**, **TypeScript**, **Tailwind CSS**, **Express.js**, **Nginx**, **MongoDB**, **NeonDB**, **BigQuery**, **ElevenLabs**, **Docker**, **Redis**

- Engineered cost-optimised analytics pipeline (BigQuery → Postgres → MongoDB) with multi-layer caching, reducing query costs by 95%+ and achieving sub-50ms API latency.
- Selected MongoDB for denormalised, read-heavy analytics workloads, simplifying query complexity and improving horizontal scalability over a strictly relational model.
- Integrated ElevenLabs conversational AI to enable speech-to-text Q&A workflows, allowing students to query analytics data verbally and receive spoken responses, reducing friction for non-technical users.
- Integrated conversational AI interfaces using ElevenLabs with speech-to-text Q&A workflows
- Implemented Sentry for real-time error monitoring across production, reducing mean time-to-detect critical issues on a live platform serving 1,200+ users
- Configured Nginx as a reverse proxy with load balancing across services, ensuring zero-downtime deployments

### Cambridge Pseudocode IDE:

Skills: **Figma, Next.js, TypeScript, Tailwind CSS**

- Built a browser-based parser executing IGCSE/A-Level pseudocode in real time to enable KS4/5 exam student grasp abstract algorithmic concepts, bridging the gap between syntax and genuine algorithmic understanding.

### Classifier AI: ML Learning Tool

Skills: **JavaScript, TensorFlow.js, KNN Algorithm, HTML & CSS**

- Implemented **KNN-based** image classification pipeline replacing paid ML tooling, saving **£6k–£18k** annually.

### Maths Tutoring App

Skills: **Typescript, Tailwind, Nodejs, Nextjs, Nginx, DigitalOcean, PostregSQL**

- Built GitHub Actions **CI/CD pipeline** to automate deployments on push to main, eliminating manual releases and reducing deployment risk
- Secured **API endpoints** using **Arcjet** for rate limiting and bot protection, preventing abuse on a publicly accessible tutoring platform
- **Implemented RESTful APIs** with cloud **PostgreSQL** via **NeonDB**, enabling serverless database access with no infrastructure overhead

## EDUCATION

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**PGCE Computer Science** - King's College London ( Sept 2021 – Jun 2022 )

**BSc Computer Science** - King's College London ( 2017 – 2020 )

**Computer Science and Maths** - Newham College, Stratford | London ( 2016 – 2017 )