

Manoj Pandian Sakthivel

SENIOR FULL-STACK ENGINEER

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Profile

Senior full-stack engineer — ten years across genomics, education and analytics platforms, moving from frontend leadership to owning backend, data and infrastructure delivery (React/TypeScript, Rust, Python, AWS, Terraform). Known for finding the one performance optimisation that changes everything: a 30-minute pipeline became a sub-millisecond lookup; a 90-second page became three. I ship test-first (TDD — Jest, Playwright), end-to-end — including three live products of my own.

Experience

OCT 2022 - PRESENT

Lead Front-End Developer, NatureMetrics — Guildford, UK

Replaced a 30-minute, resource-heavy pipeline with a sub-millisecond database lookup by precomputing results once — cutting both runtime and infrastructure cost.

- Built the platform's frontend from scratch in React & TypeScript, leading and mentoring the 3-person frontend team and shipping test-first with automated unit, integration and end-to-end tests (Jest, Playwright).
- Took over the platform's Go GraphQL backend when one engineer left and the other went on long-term leave — and have owned backend delivery alongside frontend since.
- Designed and built a new Rust engine powering dashboard data queries, plus a Dagster pipeline ingesting GBIF biodiversity data.
- Own the infrastructure end-to-end: Terraform (Infrastructure as Code), GitHub Actions CI/CD, AWS ECS/Fargate deployments, and observability with OpenTelemetry, Prometheus and Sentry.

MAR 2019 - OCT 2022

Front-End Web Developer, EMBL-EBI — Cambridge, UK

Cut an Ensembl feature's load time from ~90s to under 3s with targeted database indexes — cracking in days a problem the team had worked for weeks.

- Rebuilt a legacy bioinformatics platform in React, TypeScript and GraphQL within a 15-member cross-functional team.
- Twice held the rotating release-manager role for a 13-developer team — both releases shipped with zero critical defects.
- Led incident response as the primary point of contact for production issues and non-technical scientific stakeholders.

JUN 2015 - FEB 2019

Developer, SchoolPod — Leicester, UK

Rebuilt the parent portal used by 100,000 parents into a responsive, far more usable experience — shortlisted for Employee of the Year (one of 4 nominees across 160 staff).

- Helped grow SchoolPod from a buggy 150-school product into a 3,000-school flagship, as one of a two-developer team.
- Pitched the CTO on clustering every table's index by school rather than primary key — a database-wide performance win adopted across the product.

JUN 2014 - FEB 2015

Developer, FutureRising Ltd — London, UK

As one of the first two hires after the founders, took sole ownership of the platform — maintaining and running it after handover from the original contract developer.

Personal projects

- Phoscart

LIVE · WEB PLATFORM

Professional photography platform for showcasing and selling work — connect with clients, grow a business, and share a portfolio online.

React · TypeScript · Strapi · AWS

phoscart.com
- Kempt

LIVE · MACOS APP

Native macOS utility that turns messy folders into tidy structures — sort by type, extension, or date with preview, undo, and a free core plus an optional Kempt Pro upgrade.

Swift · SwiftUI · macOS

wrume.com/kempt
- Rummy Score Tracker

LIVE · WEB APP

Free browser scorekeeper for Indian Rummy, used by 500+ players a month — track rounds, dealers, eliminations, and history with no install and no account.

React · TypeScript · Vite

rummy-score-tracker.com

Skills

Languages	Go · Rust · TypeScript · JavaScript · Node.js · Python · SQL
Frontend	React · Redux Toolkit · Next.js · Vite · Bun · Tailwind CSS · shadcn/ui · Framer Motion · TanStack Query · React Hook Form · Passkeys / WebAuthn · Recharts · D3 · Leaflet · react-leaflet · React-PDF · Storybook · Jest · Playwright · Web performance optimisation
Backend & APIs	GraphQL · gRPC · grpc-gateway · Axum · SQLx · Tokio · REST APIs · GraphQL API design · JWT auth · Supabase · Stripe
Data & Pipelines	Dagster · BigQuery · Parquet · FastAPI · pandas · GeoPandas · GeoJSON
Datastores	PostgreSQL · PostGIS · MySQL · MariaDB · MongoDB · Neo4j · Redis · DuckDB · SQLite
Cloud & DevOps	AWS ECS · AWS Fargate · S3 · Cognito · SQS · SES · Secrets Manager · CloudWatch · IAM · Terraform (Infrastructure as Code) · GitHub Actions (CI/CD) · Docker · Git · Vercel
Observability & Monitoring	OpenTelemetry · Prometheus · Sentry
Practices	TDD · Extreme Programming (XP) · Agile
Native / Mobile	Swift · SwiftUI · macOS · React Native · Expo

Education

2013 – 2014	MSc Advanced Computer Science University of Leicester, UK Merit · Best Software Project award
2009 – 2013	B.Eng Computer Science Jeppiaar Engineering College, India First Class

Interests

- Badminton
- Photography
- Bouldering
- Gardening
- Travel