Michael Duby

Senior Full Stack & AI Engineer | React, React Native, Node.js, TypeScript, LLMs

CONTACT

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TECHNICAL SKILLS

Languages

TypeScript, JavaScript, Python, SQL

Frontend

React, Next.js, Redux

Mobile

React Native, Expo, iOS, Android

Backend & Databases

Node.js, Express, FastAPI, REST APIs, GraphQL, PostgreSQL, MongoDB, Redis

AI/ML

Large Language Models (LLMs), OpenAI API, LangChain, Retrieval-Augmented Generation (RAG), pgvector

Cloud & DevOps

Amazon Web Services (AWS), Docker, Kubernetes, CI/CD, GitHub Actions

Testing & Practices

Jest, Cypress, Detox, Agile/Scrum

EDUCATION

Bachelor's Degree in Computer Science

Indiana State University

Terre Haute, IN · Aug 2012 – Sep 2016

PROFESSIONAL SUMMARY

Senior Full Stack Engineer with 9 years of experience building web, mobile and AI-powered products for large healthcare organizations. Core stack spans TypeScript, React, Next.js, React Native, Node.js, Python, PostgreSQL and Amazon Web Services (AWS), with recent focus on integrating Large Language Models (LLMs) and Retrieval-Augmented Generation (RAG) into production applications. Delivered a cross-platform React Native app serving over 40,000 monthly active users and an LLM-based clinical knowledge assistant that cut protocol search time by 35%. Experienced in HIPAA-compliant system design, cloud-native microservices and CI/CD automation that moved releases from monthly to weekly. Strengths include system design, end-to-end ownership from mobile client to cloud infrastructure, and mentoring engineers through code reviews and pairing.

PROFESSIONAL EXPERIENCE

Senior Software Engineer

Apr 2023 – Jul 2026

DaVita Kidney Care · Denver, CO (Remote)

- Architected a cross-platform React Native and Expo patient care mobile app for iOS and Android in TypeScript, sharing 85% of code across platforms and serving over 40,000 monthly active users.
- Built a Retrieval-Augmented Generation (RAG) clinical knowledge assistant using Large Language Models (LLMs), the OpenAI API, LangChain and pgvector on PostgreSQL, cutting staff time spent searching care protocols by 35%.
- Developed Python FastAPI microservices for LLM orchestration, prompt management and streamed responses, adding Redis caching that lowered median inference latency by 40% and reduced monthly token spend by 25%.
- Led the migration of legacy clinician dashboards to Next.js and React with a GraphQL API layer on Node.js, improving average page load time by 45% across 12 clinical workflows.
- Deployed containerized services with Docker and Kubernetes on Amazon Web Services (AWS), using EKS, Lambda and S3 to sustain 99.9% uptime while handling roughly 300 requests per second at peak.
- Automated CI/CD pipelines with GitHub Actions for web and mobile builds, including over-the-air Expo updates, moving release frequency from monthly to weekly and shortening build times by 30%.
- Established a testing strategy with Jest for unit tests, Detox for mobile end-to-end flows and Cypress for web, raising code coverage from 55% to 85% and reducing production defects by 30%.
- Mentored 4 engineers through code reviews and pairing, and partnered with product, design and clinical stakeholders in Agile/Scrum sprints to deliver HIPAA-compliant features on schedule.

Full Stack Software Engineer

Jun 2019 – Feb 2023

Trinity Health · Livonia, MI (Remote)

- Built patient scheduling and billing portal features with React, Redux and

TypeScript, delivering accessible, responsive interfaces used by more than 25,000 patients each month across the health system.

- Developed Node.js and Express REST APIs integrating electronic health record data through HL7 FHIR interfaces, processing approximately 500,000 records per day with HIPAA-compliant access controls and audit logging.
- Delivered a React Native mobile app for care teams on iOS and Android with offline sync and push notifications, adopted by 3,000 clinicians within the first 6 months of launch.
- Optimized PostgreSQL queries, indexing and Redis caching for high-traffic scheduling endpoints, reducing 95th percentile API response time from 900 milliseconds to 250 milliseconds during peak hours.
- Prototyped a Python machine learning service that predicted appointment no-shows from historical visit data, informing targeted outreach that reduced missed appointments by 8% across pilot clinics.
- Containerized services with Docker and deployed them to Amazon Web Services (AWS) through automated CI/CD pipelines, cutting deployment time from 2 hours to 20 minutes while reviewing code for a team of 6.

Software Developer

Jan 2017 – May 2019

IU Health · Indianapolis, IN (Onsite)

- Developed JavaScript and React interfaces for an internal clinical operations tool, replacing spreadsheet-based processes and supporting daily use by roughly 1,200 hospital staff members across multiple facilities.
- Built Node.js and Express REST APIs backed by MongoDB and SQL data stores, exposing staffing and bed availability data to 5 internal applications with consistent validation and error handling.
- Contributed to a React Native pilot app for nurse shift handoffs on iOS and Android, shipping 10 screens and reducing handoff documentation time by an estimated 15%.
- Wrote unit and integration tests with Jest and added automated build checks, raising code coverage from 40% to 75% and catching regressions before each biweekly release.
- Collaborated with designers, analysts and clinicians on an Agile/Scrum team of 8, participating in code reviews and sprint planning to translate clinical requirements into shippable features.

Software Engineer Intern

Jun 2016 – Dec 2016

Google · San Francisco, CA (Hybrid)

- Built features for an internal engineering productivity dashboard using Python and JavaScript, surfacing build and test metrics to a team of roughly 30 engineers.
- Implemented backend data aggregation jobs in Python with SQL queries, reducing dashboard data refresh time by 25% and improving the reliability of nightly reports.
- Wrote unit tests and documentation for all submitted changes, landing more than 40 reviewed code changes while following established code review and style standards.
- Presented a design document and final project demonstration to the host team, incorporating feedback from 3 senior engineers into the shipped implementation.