

Fred Doughty

Principal Architect | Senior Full-Stack Engineer | Agentic AI & Cloud Platforms

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PROFESSIONAL SUMMARY

Principal architect and hands-on technical leader with 25+ years of experience designing and delivering cloud-native web, mobile, and enterprise platforms. Deep expertise in microservices, micro-frontends, Angular through v21, Node.js/TypeScript, Java, AWS, and GCP. Applies agentic AI tools - including Claude, Codex, Cursor, Kiro, and Gemini - across architecture, implementation, testing, debugging, code review, and documentation, while building production AI capabilities for safety, content, search, speech, and multilingual experiences.

CORE EXPERTISE

Agentic & Applied AI: Claude, OpenAI Codex, Cursor, Kiro, Gemini, Vertex AI, multimodal LLMs, prompt/context engineering, Cloud Vision, Speech-to-Text, language detection/translation, content generation, and moderation

Architecture & Backend: Microservices, micro-frontends, modular monoliths, serverless/event-driven systems, Node.js, TypeScript, NestJS, Express, Java/Spring, REST APIs, Pub/Sub, and Cloud Tasks

Frontend & Mobile: Angular 21, React, JavaScript/TypeScript, HTML5, CSS3, Tailwind, Bootstrap, and Capacitor for Android/iOS

Cloud, DevOps & Data: GCP, AWS, Terraform, Docker, Kubernetes, App Engine, Cloud Functions, API Gateway, Firebase, Firestore/RTDB, Cloud Storage, PostgreSQL, Redis, GitHub Actions, and Cloud Build

Growth, Quality & Security: Technical SEO, Angular SSR, Google Ads, Google Analytics 4, Jest, Vitest, Playwright, Cypress, JUnit, Firebase Auth, OAuth/JWT, reCAPTCHA Enterprise, Persona, and Secret Manager

PROFESSIONAL EXPERIENCE

American Well | Senior Software Engineer / Technical Lead

Jun 2020 - Present

- Lead an Agile delivery team of eight (six engineers and two QA) building critical features for a national telehealth platform.
- Provide hands-on technical and operational leadership across micro-frontends/micro-SPAs and backend microservices supporting real-time healthcare workflows.
- Own architecture, delivery, production support, monitoring, and reliability across Angular, React, Node.js/NestJS, PostgreSQL, Redis, Contentful, and AWS.
- Automate infrastructure and delivery with Terraform and AWS services including Lambda, EC2, DynamoDB, SNS/SQS, S3, and CloudWatch.

HeartBridge International | Principal Architect

Aug 2025 - Present

- **Platform & UI/UX leadership.** Own the architecture, mobile-first UI/UX design, and hands-on delivery of an international dating platform spanning consumer web, Capacitor Android/iOS apps, an SSR marketing/blog site, an Angular 21 admin dashboard, APIs, data, and cloud operations.
- **Frontend architecture.** Designed an Angular micro-frontend suite with Module Federation, then consolidated eight feature applications into locally lazy-loaded modules with controlled federated rollback - preserving independent feature boundaries while simplifying operations.
- **Microservices & cloud.** Architected a distributed GCP platform using Node.js/TypeScript, Express, App Engine, API Gateway, Cloud Functions, Pub/Sub, Cloud Tasks, Firebase, Firestore/RTDB, Cloud Storage, Vertex AI Discovery Engine, Terraform, Cloud Build, and GitHub Actions.
- **Agentic AI development.** Use Claude and Codex for system design, repo-wide implementation and refactoring, test generation, debugging, code review, visual/E2E validation, CI/CD automation, and technical documentation.

PROFESSIONAL EXPERIENCE (CONTINUED)

HeartBridge International | Principal Architect (continued)

- **Applied AI.** Built Google Cloud Vision SafeSearch/face-analysis flows for image moderation and selfie liveness; Gemini text moderation for spam/scam detection; multimodal, image-aware message ideas; LLM-generated blog content and SEO descriptions; and Vertex AI profile discovery.
- **Speech & language.** Delivered secure voice messaging and transcription with Speech-to-Text V2 automatic language recognition, private GCS media, Cloud Tasks workers, language detection, Google Translate, and cached text/transcript translations.
- **SEO & growth analytics.** Implemented Angular SSR, canonical metadata, XML sitemaps, JSON-LD and social cards; instrumented privacy-aware GA4 web/native funnels plus Google Ads attribution, offline conversion, and retraction workflows.
- **Identity, messaging & payments.** Integrated Firebase Auth/OAuth, Persona and reCAPTCHA, FCM/Mailgun notifications, CCBill/PayPal/Stripe subscriptions, and custom Google Play Billing.

WebBirdie, LLC | Founder & Architect

Jan 2017 - Jan 2025

- Designed and built a custom CMS and e-commerce marketplace from the ground up, including customer and administrative experiences for products, orders, payments, shipping, messaging, and alerts.
- Owned full-stack architecture, UI/UX design, data modeling, application security, operations, and multi-environment delivery for the platform.
- Implemented Angular and Node.js/TypeScript services on GCP with Express/NestJS, App Engine, API Gateway, Cloud Functions, Pub/Sub, Firebase/Firestore/Datastore, Terraform, Cloud Build, and GitHub Actions.

Financial Engines | Senior Software Engineer

Oct 2019 - Jun 2020

- Built Java 8/Spring services for legal-document management and financial forecasting on AWS; improved responsive web/mobile UX and Tableau reporting.
- Delivered REST integrations and production workflows with Oracle, Jenkins, PowerShell, and Tidal.

Casamba | Senior Software Engineer

Apr 2018 - Oct 2019

- Architected a modular Java/Spring Integration/Hibernate platform with real-time REST webhooks and secure partner connectivity.
- Built ETL pipelines for HL7, XML, JSON, and CSV over HTTPS/SFTP/MLLP, plus Angular/Bootstrap administration tools.

Staples, Inc. | Senior Software Engineer

Jun 2017 - Mar 2018

- Developed Java/Tomcat services for SMS, push, transactional, one-off, and ad hoc communications in a global e-commerce notification platform.

Network Designs, Inc. | Senior Software Engineer

Dec 2013 - Jan 2017

- Built and supported AEM/Java intranet components serving thousands of U.S. Department of Transportation employees; implemented Omniture analytics.

Earlier career experience dating to 1997 has been truncated for relevance and brevity.

EDUCATION

Computer Science Coursework | Coppin State College | 1996 - 1998

INDUSTRY EXPERIENCE

Healthcare & Telehealth | Consumer Social & Marketplace Platforms | Financial Services | Retail & E-commerce | Federal Government