

# Kyle Upton

## Senior Software Engineer

📍 Charlotte, NC 📞 +1 (704) 906 2378 ✉ kyleupton@gmail.com

🌐 [linkedin.com/in/kyle-upton-dev](https://www.linkedin.com/in/kyle-upton-dev) 🌐 [kyleupton.dev](https://kyleupton.dev)

## Work Experience

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### Red Oak Development [↗](#)

#### Senior Software Engineer

Feb 2025 - Present

- Built a full-stack CRM platform from the ground up for the solar industry, designed to replace Salesforce for verticals with complex lead-to-install workflows (Go, Vue, PostgreSQL).
- Designed and implemented an AI-powered project summary system with content-hash-based cache invalidation and a provider-agnostic client that supports multiple LLM backends.
- Built a production notification system processing thousands of messages daily across email, SMS, web push, and in-app channels, with a Go routine worker queue, exponential backoff retry, and permanent failure handling.
- Solved critical data integrity issues by implementing optimistic locking with a three-way merge algorithm, then extended it with real-time collaboration via SSE—live form updates and presence detection, backed by pg\_notify for Kubernetes compatibility.
- Integrated Cloudfare for in-app SMS and phone calls, building a webhook ingestion pipeline with background worker processing for reliable message delivery.
- Shipped the web client as a PWA with service worker update detection and web push notifications for a native-like mobile experience.

### DigitalGlue [↗](#)

#### Senior Software Developer

Feb 2023 - Feb 2025

- Led and supervised a team of three developers, providing mentorship, conducting code reviews, and establishing coding standards.
- Directed a company-wide transition from JavaScript to TypeScript, reducing bugs by 25% and increasing developer productivity by 20%.
- Spearheaded the design and implementation of an update pipeline for the company's Electron.js desktop application, enabling over-the-air updates for users.

#### Software Developer

Nov 2021 - Feb 2023

- Developed a Python API to programmatically control BlackMagic Design's DaVinci Resolve video editing software, showcased in a demo that won the NAB Show Product of the Year 2022.
- Redesigned the product's web stack, eliminating unnecessary middleware layers to improve security, eliminate bugs, and enhance DX.
- Led the refactoring of the product's REST API using modern JavaScript practices, reducing page load times by 35% through the elimination of blocking I/O.

#### Intern

Oct 2018 - Nov 2021

- Contributed to full-stack feature development across backend and frontend teams, progressing from testing and email templates to shipping production features.

## Skills

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Go · TypeScript · JavaScript · Python · SQL · Java · Vue · React · Node.js · PostgreSQL · Docker · AWS · Nuxt · Tailwind · Electron · HTML · CSS · Git · GitHub Actions · REST APIs · Linux

## Education

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**Kennesaw State University**  
B.S. Computer Science  
2018 - 2021