Desmond Mullen • Principal Software Engineer

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Summary

Principal Software Engineer specializing in Architecture, AI chatbots, AI tools, AI-assisted development, JavaScript, Node.js, REST APIs, MongoDB, security, and NoSQL and SQL databases. Effective leader in process development, architecture, and design of scalable backend systems, microservices, and APIs.

Skills

- *AI:* OpenAI Platform, Anthropic, ChatGPT, Claude
- *Languages:* JavaScript, TypeScript, Node.js, MongoDB, Express, React
- *Backend:* REST API Design and Development, Microservices Architecture, Authentication and Authorization (OAuth, JWT)
- *Databases:* NoSQL Databases (MongoDB, Firebase, DynamoDB), SQL Databases (MySQL, PostgreSQL), Data Modeling and Schema Design, Query Optimization
- *Web Technologies:* Express.js, Socket.io, WebSockets, React, HTML, CSS
- *Testing and Debugging:* Unit Testing (Mocha, Jest), Integration Testing, API Testing (Postman), Debugging Tools (Chrome DevTools, Node Inspector)
- *DevOps:* CI/CD, Docker, Serverless, UNIX, Linux
- *Version Control:* Git, GitHub, npm
- *Deployment Platforms:* AWS, Azure, GCP
- *Security:* OWASP, CASA

Relevant Experience

2026 - now **CEO,** *LowSignalMail*
- Founder and developer of LowSignalMail. Users handle Gmail by text message, on any device that can text. No app, nothing to configure, just text

2025 - now **Principal Software Engineer,** *Legal Aid of North Carolina*
- Design and develop original software tools for staff and clients including “Bill the PAI Platypus” AI chatbot for staff to query about arcane PAI rules, and “TIF” Text Intake with AI-assistance for clients to apply for free legal services using only SMS text messages.

2021 - 2024 **Principal Software Engineer,** *Cell-Ed*
- Principal architect for key software security functionalities protecting a growing ecosystem of microservices.
- Designed and drove new backend API microservices to production, extending live coaching capabilities and allowing the company to serve tens of thousands more learners with the same coaching staff.
- Advised VP of Engineering and VP of Product on all technology decisions.
- Established company-wide software coding standards and code consistency practices.
- Led initiative to greatly increase software documentation coverage and testing capabilities.
- Developed sample code leading frontend engineers in easy integration of new services.

2019 - 2021 **Senior Software Engineer,** *FlexGen® Power Systems*
- Originated key software security functionalities for power grid generation and storage stations, high-priority strategic targets for foreign powers and domestic terrorists.
- Served as lead engineer for key customer-facing product introductions.
- Architected new API and database functionalities to meet growing customer requirements.

- Established software code consistency practices.
- Led technical interviews of software engineering candidates.
- Mentored new hires.
- Produced original customer and internal documentation for new software features.

2018 - 2019 **Software Developer,** *desmondmullen.com*

- Developed shared messaging apps with leading-edge security components, geolocation, and shared lists.
- Created the “SpaceElephant” geofencing reminders iPhone app, the “Ingredients” app to scan food barcodes alerting the user to selected ingredients, and “Vehicle Data Tracker” where users can track gas, oil, and maintenance data on multiple vehicles.

2015 - 2018 **Technology Manager,** *Combustion Cycles Ltd*

- Pioneered key database and software solutions for workflow management and load-balancing of customer work.
- Managed daily operations for independent motorcycle service and sales shop.

2014 - 2015 **ELF Product Manager, Process Manager** *Organic Transit*

- Led the development of Organic Transit’s flagship *ELF* hybrid vehicle.
- Engineered and implemented processes for vehicle manufacturing, R&D, and design and production changes.

Education

University of North Carolina – Full Stack MERN Developer certificate, graduated first in class

University of South Florida – B.A. program, Electronic Music, GPA: 4.0, Dean’s List