



Full-stack software engineer and technical leader with UI design expertise, interested in product challenges and solving business problems.

I seek out roles where I and my immediate teammates have real potential to significantly alter the prospects of the larger business. I thrive in environments where everyone on the team seems smarter than everyone else, and yet everyone is consistently focused on a common mission. I am most effective when empowered to act on business problems with a full understanding of their wider context.

## Skills & expertise

*Exceptional front-end development:* HTML, SVG, CSS, Sass, TypeScript, React, Angular, Lit, React Native, D3, Moment.js, user experience, responsive design, progressive enhancement, browser compatibility, large-scale refactoring.

*Dependable server-side development and operations:* Python, Go, Node.js, Flask, Django, PostgreSQL, AWS, GCP, Docker, Git, Mercurial, performance optimization.

## Education

### **Swarthmore College**

*Bachelor of Arts, Computer Science and Religion · August 2004–June 2008*

## Professional experience

### **Slabstack Software, Inc.**

*Staff Software Engineer · March 2023–present*

Frontend leader and versatile technical contributor for the concrete industry's most broadly integrated sales and business management platform, using React, TypeScript, Go, PostgreSQL, Terraform, and Nix.

Implemented delivery cost estimation capabilities with live-updating UI. Dramatically improved backend performance and scalability for multi-item views. Architected and contributed to notification systems. Added permissions structures and business process workflows to address enterprise customer requirements. Contributed to operational resilience for the platform's first-in-the-industry integrations with Sysdyne's ConcreteGo and Command-Alkon's commandSERIES dispatch software. Implemented code generation tools and improved local developer environments that reduced the engineering effort required to implement new product features without sacrificing quality. Participated in a triage rotation, providing first-line engineering responses for operational and customer issues as scheduled.

### **Modelo Health, Inc.**

*Staff Software Engineer (part-time) · September 2020–present*

Set technical strategy and contributed to building the world's first pregnancy app for Inclusive Care and its backend infrastructure. Modelo Health is a mission-driven company focused on eliminating health disparities and reducing preventable harm for all pregnant women.

Modelo Health's phone app is built with React Native in TypeScript. Backend services are built with Flask in Python, using Nix for reproducible development environments, and storing data with PostgreSQL, Google Cloud Storage, and Firestore.

## **Google, LLC**

*Senior Software Engineer · June 2016–March 2023*

Front-end technical owner of Google's ISP Portal for internet service providers and other infrastructure partners. The ISP Portal shares data and visualizations to identify network issues, clarifies communication via a custom ticketing system for fixing network equipment and configurations, and automates repair and deployment processes for Google's network infrastructure.

Led the ISP Portal's continuing efforts to expand and enhance its capabilities and user interface for troubleshooting network activity. Forged partnerships with other teams throughout Google and Alphabet. Led development and set strategy for the UI layer of a domain-specific programming platform that enables Google's operations teams to structure their communications with ISPs and automate routine maintenance actions, speeding resolution for networking infrastructure issues and tasks. Refactored and modernized the front-end codebase at scale to reduce overall code size by 100,000+ lines while simultaneously improving maintainability, increasing automated testing coverage, and expanding user-facing features.

Built operator-facing UI for YouTube's Video Checkup and Google's Mobile Network Insights. These tools provided cellular network operators with geographically granular real-world performance data about their own networks while preserving user privacy.

## **WHOOOP**

*Senior Software Engineer · March 2014–May 2016*

Led development and deployment for WHOOP's web application, where coaches and athletes delve deeply into athletic performance and training effectiveness. WHOOP's web client is a complex Angular application dripping with custom SVG charts and graphs that are built as composable directives rendered with D3. Styles are defined in Sass; deployment tools and development environments use Grunt and Gulp. In production, this is hosted at AWS using S3 and CloudFront.

Strong advocate for automated testing: unit tests are written with Mocha and Chai for custom Angular services, with end-to-end functional tests running in Protractor against an internal Selenium grid. All tests run in Travis CI and/or Jenkins with continuous deployment to a staging environment for QA, followed by rolling production releases.

Major contributor to back-end services. Retrofitted WHOOP's Python-based scientific analytics modules to expose an internal REST API using Flask and Gunicorn. Configured Docker containers for local development and production deployment. Strengthened automated testing capabilities with Nose and Behave. Ported part of WHOOP's Strain Score into PostgreSQL functions to ensure consistent processing from multiple codebases. Contributed new features and bug fixes to asynchronous workers and REST APIs implemented in Node and Erlang.

## **PerkinElmer Inc.**

*Senior Software Engineer · October 2013–March 2014*

Mentored implementation teams, established operational systems, and drove new feature development — ensuring a smooth transition from Wingu's acquisition through the March 2014 public release of the Elements ELN platform as a PerkinElmer product.

## **Wingu, Inc.**

*Vice President of Engineering · March–October 2013*

Engineering leader, primary implementor, and full participant in the acquisition process. (Wingu was acquired by PerkinElmer in October 2013.)

Delivered new features and high-value fixes using JavaScript, Python, Java, and Groovy. Supported server operations and increased automation of deployment processes. Improved API response times up to 100,000x under load.

## **Wingu, Inc.**

*Senior Software Engineer (UI Lead) · October 2011–March 2013*

Led the team's front-end web development. Used HTML 5, CSS3, & JavaScript to rapidly build user interfaces that achieved key business goals and validated new product strategies.

Implemented new features in Flask and a hybrid Spring/Grails app using Python, Java, and Groovy. Added mobile device support to an IMAP application server. Provided on-call production support on a regularly rotating schedule. Performed basic online user testing.

## **ButterflyHug, LLC**

*Principal · January 2010–October 2011*

Independent consulting for clients.

Built web applications with HTML 5, CSS3, JavaScript, Django, and WordPress. Delivered responsive designs that adapt to a range of screen sizes from mobile to desktop. Coordinated closely with clients to define requirements and build design consensus.

Django projects included RegulationDocs.Com, where each response rendered thousands of permission-sensitive text fragments with dynamic navigation and search.

## **Maine Rural Partners**

*Communications Technology Manager · September 2008–October 2011*

Renovated existing website and hardened a PHP script that processes credit card donations. Convened and led diverse networks of health, agriculture, and community organizations to publish inspiring case studies & networking information in shared online databases I built.

Created a consistent visual brand identity. Edited, designed, and managed the production of a major research report and many technical assistance publications.

## **Scott Arboretum of Swarthmore College**

*Web Developer · December 2005–September 2008*

Designed and implemented a new website and blog with many added features and an all-new visual design that highlights photos and scheduled events. The site includes a dynamic calendar, a custom Google site search design, and a rich "virtual tour" where visitors can explore the Arboretum's collections.

## **Swarthmore College**

*Web Developer · October 2004–August 2007*

Designed and implemented website templates in XHTML/CSS for departments, professors, and campus institutions using Adobe Contribute and WordPress. Trained and supported content editors to update their sites.