Will Richards

Senior Software Engineer | Front-End Developer

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Profile Summary

• **Senior Front-End Engineer** with **5+ years** of experience delivering scalable, high-performance, and accessible **enterprise web applications**, including real-time analytics platforms and responsive UI redesigns for **Fortune 100 companies**.

• Well-rounded technical skill set, with expertise in frameworks (**Angular 16+**, **Vue**), languages (**TypeScript**, **JavaScript ESNext**, **Python**), state management (**RxJS**, **NgRx**), styling systems (**SCSS**, **Tailwind CSS**, **Material Design**), visualization tools (**D3.js**), and build tooling (**Webpack**, **Vite**).

• Deep expertise in state-driven architectures, **component library design**, **accessibility** (**WCAG 2.2 AA**), and client-side **performance tuning**, applying **Component-Driven Development** and **modular front-end engineering**.

• Engaged collaborator partnering with **cross-functional teams** within **Agile** settings, contributing to sprint planning, production debugging, and cross-functional alignment with a pragmatic, solution-oriented mindset.

• Hands-on leader fostering **code quality** via mentorship and rigorous **code reviews**, driving adoption of modern styling systems, and leading **UI/UX modernization** efforts that established standards for **accessibility** and **mobile responsiveness**.

Technical Skills

Programming Languages: JavaScript, TypeScript, Python3, C++11
Frameworks & Libraries: Angular (16+), Vue, Node.js, D3, RxJS, NgRx, TensorFlow, Material Design
Web Technologies: HTML5, CSS3, SCSS, Tailwind CSS
Tools & Platforms: Git, Linux, Webpack, Vite
State Management: NgRx
Accessibility Standards: WCAG 2.2 AA
Cloud Services: AWS
Testing & Build Tools: CMake, VoiceOver, Lighthouse

Education

Carleton College | Bachelor of Arts in Computer Science — Northfield, MN Aug. 2013 - May 2017

Work Experience

MODELOP

Chicago, IL

Senior Front-End Engineer — Apr. 2022 - Present

• Played a pivotal role within the **Software Development Life Cycle** by delivering enterprise-grade web application features for **Fortune 100** companies, owning key workflows end-to-end from **conception to production** with a focus on **performance**, **availability** and security.

• Partnered with the Director of **UI/UX**, **VP** of Product, and backend squad leaders (**MLC** and **Core Services**), while also contributing to architecture and technology discussions with the **CTO** and **VP** of Engineering, ensuring customer pain points were addressed and features delivered effectively in **Agile** sprints.

• Engineered **RESTful APIs** and using **Spring Boot** and **Spring Data JPA** with query derivation methods, resolved production and debugging issues, and worked with **Java** Microservices and **Docker**/**Kubernetes**.

• Built and maintained enterprise web application features using **Angular 17+**, **TypeScript**, **RxJS**, **NgRx**, and **SCSS**, applying Atomic Design, Component Encapsulation, Change Detection Strategies, and **React**ive State Synchronization to deliver reliable functionality with a reduction in defects.

• Automated workflows using the internal **SDK** and **AWS CLI** for **SageMaker** projects, automating data loading, environment setup, and test execution for **Jira**-based **Zephyr** tests, with automatic clean-up to accelerate QA cycles.

• Extended the **Python SDK** by adding functions to expose key **REST API** endpoints and replicate common **UI** tasks, improving developer efficiency and enabling faster integration with test and production environments.

• Introduced **Tailwind CSS** to establish a utility-first styling paradigm, improving maintainability and design consistency in synergy with **Angular Material** and facilitated through **Figma**, thereby accelerating front-end delivery speed.

• Redesigned the frontend for responsiveness down to **320px** and **WCAG 2.2 AA** compliance with **Axe**, **Lighthouse**, **Voice Over**, and **Keyboard Navigation**, integrating Lazy Loading and Tree Shaking to reduce page load time.

• Implemented a token-based design system across the User Interface using **SCSS**, **Tailwind CSS**, **Chakra UI**, **Storybook**, **Figma Tokens Plugin**, **W3C Design Token Standard**, and **Amazon Style Dictionary**, improving styling consistency and reducing style-related bugs.

• Created an example page featuring all tokens using **Angular** and S**CSS**, and created the **Developer Handbook** to guarantee consistent adoption.

• Enforced front-end code quality through **ESLint** and strong typing, applying smart/dumb components and dependency injection.

• Optimized rendering performance by applying Lazy Loading, Deferred Loading, and using **Angular DevTools** and **Lighthouse**, reducing initial load time and enhancing runtime responsiveness under peak usage.

• Delivered **presentations** to leadership on the adoption of **Chart.js**, upgrading from **Angular 16** to **Angular 17**, and the integration of **AI** development tools for the dashboard visualizations.

University Of Utah, Department Of Human Genetics

Salt Lake City, UT

Web Developer

Dec. 2019 - Dec. 2021

• Drove the design and development of a pedigree visualization analysis tool for genomic data, integrating it into a secure data platform and delivering optimized interactive visualizations, while collaborating with analysts and clinicians to resolve critical issues within an **Agile** environment.

• Developed a dynamic genomic data visualization platform with **Vue**, **D3**, and **Node.js**, incorporating **Vuex**, **Web Workers**, **OffscreenCanvas**, Progressive Hydration, and Virtual **DOM** Optimization to improve interactivity.

• Standardized reusable visual components in **Vuetify**, employing **Atomic Design** and global state management to decrease **UI**-related bugs across enterprise applications.

• Built an integrated tool in a secure, access-controlled **AWS** environment using **OAuth 2.0**, **AWS CloudFormation**, and **IAM Policies** to achieve consistent provisioning and maintainability.

• Improved rendering performance by employing Code Splitting and Lazy Loading along with Modular Components, reducing page load time and enhancing user experience.

• Mentored Junior Developers through guidance provision, **code reviews**, and fostering a collaborative environment.

Software Developer

Sep. 2017 - Nov. 2019

• Refactored genomic variant detection tools by updating pipelines with **C++11** and **CMake**, improving code maintainability and execution stability to support accurate and scalable data analysis.

• Optimized build stability and runtime by integrating **Make** with **CMake**, applying parallel compilation techniques, and enhancing error-checking/debugging in **Python** and **Bash** via **Snakemake**, reducing build times by **10x**.

• Created an **ALU** detection tool within genomic workflows using **FASTAHACK**, **MINIMAP2**, **BAMTOOLS**, and **Snakemake**, applying multithreading and lock-free hash tables for high throughput.

• Enhanced structural variant detection for mobile elements, chromosomal translocations, and indels using **Rufus** and **Lumpy** with **BWA-MEM2** and **Minimap2**, applying multi-core parallelism to accelerate runtime.

• Built modular command-line interfaces in **Bash** with **ArgBash** to optimize usability, and executed patient data analysis on **AWS HPC** clusters using **SLURM** and **Amazon S3**.

Research Assistant

Jun. 2017 - Aug. 2017

• Designed and trained convolutional neural network (**CNN**) classifiers in **Python** and **TensorFlow** to detect human tissue contamination in mouse xenograft genomic data, achieving **92%** model accuracy for downstream oncological research.

• Developed modular preprocessing and training pipelines for genomic sequence data, incorporating **Biopython** and supervised learning workflows to ensure reproducibility and adaptability for future research experiments.