

# WILLIAM RICHARDS

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## SENIOR FRONTEND ENGINEER

**Innovative with a passion for building scalable, high-performance web applications, ensuring seamless, accessible, and maintainable web experiences**



Results-driven Front-End Engineer with 5+ years of experience in JavaScript frameworks, specializing in Angular (16+), TypeScript, and RxJS. Adept at designing and maintaining scalable component libraries, reusable services, and architecture frameworks that enhance consistency and performance across web applications. Proven expertise in state management (NgRx), accessibility (WCAG 2.2 AA), and performance optimization, ensuring responsive, high-quality user experiences. Strong advocate for best practices in component-driven development, cross-team collaboration, and code quality through mentorship and rigorous code reviews. Passionate about continuous improvement, testing strategies, and driving innovation in modern web technologies.

### Core Competencies

- TypeScript & JavaScript (ES6/ESNext)
- Scalable Design
- Build & Deployment Pipelines
- State Management
- RESTful APIs
- Microfrontends
- Component Library Development
- Unit, Integration, and E2E Testing
- Modular Front-End Development
- Web Accessibility
- Code Reviews & Mentorship
- Automation & Scripting
- Front-End Architecture
- UI/UX Collaboration & Design Systems
- Creative Problem-Solving

### Technical Proficiencies

Git | Frontend | Backend | NodeJs | Linux | AWS | SageMaker | Python3 | Javascript | TypeScript | ES6 | HTML5 | CSS3 | SCSS | Tailwind CSS | Webpack | D3 | Angular (16+) | RxJS | NgRx | Vue | Vue-CLI | C++11 | Valgrind | CMake | VoiceOver | Lighthouse

## Professional Experience

**MODEL OP – • Salt Lake City, UT • 2022 - Present**

### Senior Front-End Engineer (2022 – Present) | Front-End Engineer (2020 – 2022)

Promoted to develop key enterprise-grade web application features using Angular (16+), TypeScript, RxJS, NgRx, and SCSS for Fortune 100 companies. Assumed ownership of key features in a small team, delivering pages and workflows from conception to production. Wrote and executed integration tests, contributed to the Python SDK, and automated processes with custom Python scripts. Engaged in API design, customer feedback sessions, and production debugging.

- Formulated and maintained enterprise web app features with Angular (16+), TypeScript, RxJS, and NgRx.
- Headed creation of a complete UI redesign for mobile responsiveness and WCAG 2.2 AA compliance.
- Built and optimized API integrations, collaborating closely with backend teams.
- Automated processes with Python scripts and contributed to the Python SDK.
- Led the adoption of Tailwind CSS, driving a full-scale shift to a utility-first styling approach for improved maintainability and design consistency.
- Led a full redesign to ensure responsiveness down to 320px and spearheaded efforts for WCAG 2.2 AA compliance, leveraging assistive technologies.

UNIVERSITY OF UTAH – DEPARTMENT OF HUMAN GENETICS • Salt Lake City, UT • 2017 - 2020

**Web Developer | (2019 – 2020)**

Designed and developed a pedigree visualization analysis tool for genomic data, integrating it into a secure data platform. Built and optimized interactive visualizations using Vue, Node.js, D3, and AJAX, interfacing with RESTful APIs and an AWS-backed environment. Enhanced data accessibility by introducing local file support and creating real-case demo workflows. Refactored and optimized visualization rendering, reducing load times and improving interactivity. Conducted code reviews, production releases, and Agile-driven feature development while collaborating with analysts and clinicians to resolve critical issues.

- Developed an interactive visualization tool for genomic analysis using Vue, D3, and Node.js.
- Integrated tool into a secure, access-controlled AWS environment with RESTful API support.
- Optimized rendering performance, reducing load times and improving user experience.
- Standardized reusable visual components for enterprise-wide application reliability.
- Led production releases, Agile development, and troubleshooting in collaboration with clinicians.

**Software Developer | (2017 – 2019)**

Optimized genomic variant detection tools, modernizing pipelines with C++11 and CMake for enhanced stability. Led the development of an ALU detection tool, standardizing variant analysis workflows. Designed a user-friendly CLI, improving tool adoption. Implemented structural variant detection algorithms, extending capabilities to include mobile elements, translocations, and large insertions/deletions. Conducted patient data analysis using AWS HPC clusters to support lab research and publications.

- refactored genetic variant detection tools with error-checking and debugging.
- Modernized build environments with C++11 and CMake for cross-system stability.
- Led ALU detection tool development and integrated it into genomic pipelines.
- Implemented structural variant detection, extending capabilities to multiple genomic variations.
- Conducted high-performance genomic analysis on AWS, supporting lab publications.

**Research Assistant | (2017)**

Created a machine learning strategy to filter contaminated human tissue in mouse-derived xenograft models. Designed preprocessing, training, and filtering workflows using Python3 and TensorFlow, enabling automated contamination detection.

- Designed and implemented a machine learning pipeline using TensorFlow.
- Automated tissue contamination filtering from FastQ genomic data.
- Developed end-to-end workflows for data preprocessing and evaluation.

**Intern | (2016)**

Developed genetic data analysis tools and visualizations for 10x genomic datasets. Implemented a clustering algorithm in C++ to reconstruct large genomic regions from short-read sequences, deploying Python for data analysis and visualization.

- Built clustering algorithms to reconstruct large genomic regions from 10x data.
- Created visualization tools to analyze and present genetic datasets.

**Education**

CARLETON COLLEGE, NORTHFIELD, MN • Bachelor of Science – Computer Science