

# BERTRAND SHAO

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## TECHNICAL SKILLS

**Programming Languages:** JavaScript (ES5 & ES6), TypeScript, Python

**Tools/Frameworks:** React, Redux, React Hooks, HTML5, CSS3, SASS, Django, Redis, Node.js, Express, MongoDB, MySQL, PostgreSQL, Firebase, RESTful API Development

**Testing/Deployment:** Cypress, Cheerio, React Testing Library, Jest, Mocha, Chai, Loader.io, AWS EC2, Docker, NGINX

## WORK EXPERIENCE

### Optum

Sep 2022 – Present

Senior Software Engineer

Remote

- Managed Optum's and United Healthcare's authentication/authorization front-end systems using TypeScript and React, enhancing scalability, maintainability, and accessibility for over 20M monthly users.
- Contributed to the UI team for HealthSafe ID, an identity provider ensuring uninterrupted end-to-end login and registration capabilities and providing secure access to over 150 portals containing sensitive medical data.
- Improved risk-based authentication flow by integrating device fingerprint profiling and introducing multi-factor authentication flows, preventing, and reducing security breaches.
- Reduced login and registration time by migrating the single sign-on flow (SSO) to a native successor platform, resulting in improved user satisfaction and reduced respective page load errors by 32% per New Relic.
- Enhanced flagship page performance by implementing lazy loading for widgets, conducting waterfall analysis to identify resource loading bottlenecks, and injecting third-party scripts in React components to reduce initial load time.
- Reduced CI/CD build time by 10% and improved the SDLC by improving a functional logger, enhancing Jest testing practices, auditing packages, optimizing verification jobs, and configuring a proxy server for live backend updates.
- Conducted code profiling and bundle splitting, reducing page load times by 30% (6s to 4.2s) and improving Largest Contentful Paint by 29% (4.5s to 3.2s) using React Developer Tools, Chrome DevTools, and Webpack.
- Expanded a primitive library with easily testable, modular code components for UI monorepo teams, leading to faster development time, fewer bugs, improved code quality, and a  $\approx 12\%$  increase in code coverage.

### Duffl

Dec 2020 – Jul 2022

Full Stack Engineer

Los Angeles, CA

- Redesigned Django backend architecture to include a service layer and custom managers for complex query logic, enhancing reusability, readability, and scalability for a \$30M Y Combinator-backed delivery startup.
- Developed React/Redux-based inventory and supply management software, reducing restocking time by 18 minutes on average, lowering out-of-stock rates, and improving real-time inventory tracking and SKU management.
- Engineered a credit card payment infrastructure using Django and React, integrating Stripe, Braintree, Zage, and Authorize.net, resulting in \$2.7M in collections and \$160K saved in transaction fees within the first year.
- Redesigned website components using React, creating a custom component library and integrating Google Maps API, increased cart conversion rates (40% to 73%) in 5 months by improving performance and ensuring stylistic integrity.
- Introduced and maintained core engineering infrastructure with Cypress for end-to-end testing and Jest for unit testing, creating automated tests for location switching and payment flow, reducing product bugs and manual testing time.
- Built a routing-and-batching delivery algorithm with an interactive Google Maps UI, winning the company's first hackathon by improving order visualization, route efficiency, and reducing delivery time.
- Created a Django-based algorithm to analyze product sales rates considering factors like rate of sale and seasonality, which informed strategic restocking and contributed to an 8% weekly reduction in out-of-stock incidents.

## EDUCATION

### Hack Reactor

Feb 2020 – May 2020

Advanced Software Engineering Immersive

Los Angeles, CA

### University of California, Los Angeles

Sep 2014 – Jun 2018

Psychobiology B.S.

Los Angeles, CA