Alex Klein

Software Engineer
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Technologies

JavaScript · TypeScript · Node · Express · GraphQL · PostgreSQL · NoSQL · Sequelize · React · Redux · Git / Github · Electron · Vite · Webpack · Jest · HTML · SCSS / CSS · Figma · Adobe Creative Suite

Experience

Software Engineer – TroveQL (Open Source Product)   Jan 2023 – Present
- Integrated an Adaptive Replacement Cache (ARC) algorithm, resulting in a self-balancing cache that effectively mitigates cache misses for frequently and recently accessed data. This improvement reduced fetch speeds from approximately 200 milliseconds to around 1 millisecond.
- Refactored the backend codebase to TypeScript, reducing contributor-induced type coercion errors, and improving code readability, maintainability, and consistency as the codebase grows.
- Designed and developed a scalable front-end using React's component architecture, leveraging its state-management capabilities to accurately display real-time data. Empowered developers to easily monitor changes in cache performance and metrics, enabling data-driven decision-making.
- Utilized the Jest framework to conduct comprehensive unit testing for caching solutions, middleware, and metrics applications – quickly identifying and resolving bugs in caching logic and the data utilized for metric visualizations.
- Implemented databases in a demo application using GraphQL, PostgreSQL, and Sequelize – allowing the team to ensure the performance and functionality of the TroveQL NPM caching library.
- Included as part of OS Labs Beta tech accelerator.

Data Analyst – Industrial Data Associates, inc.   Sep 2020 – Jan 2023
- Automated SKU classifications and normalized values using VBA scripts – significantly reducing repetitive tasks.
- Designed comprehensive logical data models – improving clients' understanding of existing data flow and identifying opportunities for optimization.
- Collaborated closely with developers to customize in-house software – adding new features and adapting it to meet the unique data requirements and workflows of individual clients.
- Created taxonomies and schemas to support client PIM implementations – ensuring accurate and consistent data.

Project Manager & Designer – Lovett Design   Jun 2013 – Aug 2018
- Leveraged HTML and CSS to design and develop email templates for marketing campaigns.

Projects

HSDC Task Manager
- Developed a secure authentication process using bcrypt encryption to hash and store user passwords – ensuring data privacy and preventing unauthorized access to sensitive information.
- Analyzed and migrated authentication data from a limited NoSQL database to an ACID-compliant SQL database – successfully ensuring data consistency, integrity, and security.
- Leveraged React's component-based structure to create reusable UI elements that allowed users to easily create and delete cards and boards – resulting in improved development efficiency, code maintainability, and consistency across the application.
- Refactored the application's conditional rendering logic into React Router – resulting in a more organized and maintainable codebase with improved developer experience and performance.

Education

Washington University in St. Louis   *St. Louis, MO*

Columbus College of Art & Design   *Columbus, OH*

Interests

When I'm away from my computer you'll see me hiking around Ernest Debs park (amazing to see the turtles), cooking and eating delicious food (happy to trade sourdough war-stories), and reading fantasy novels (always looking for recs!).