Hee Je (Darryl) Joo

Software Engineer

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Technical Skills:

Frontend: Javascript, Typescript, React/Redux, NextJS, HTML/CSS/SASS, Material UI, Tailwind CSS, Electron, React Testing Library
Backend: Node/Express, Typescript, REST APIs, Jest, Playwright, Kafka, AWS Cloud Services
Data/Databases/DevOps: PostgreSQL (SQL), MongoDB (NoSQL), Prometheus, Grafana, Docker, Git/Git Flow, Python

Open Source:

Software Engineer | KMon (Accelerated under OSLabs) – Open Source Monitoring and Alerting Tool for Kafka Clusters
- Configured Kafka cluster and a companion stress testing application on a local host for development and testing in order to create an open source solution for monitoring the health of clusters operating with the KRaft controller election consensus protocol.
- Migrated JMX Exporter to scale horizontally as an HTTP agent with Prometheus to create a more flexible monitoring platform, allowing for monitoring of brokers at default JMX endpoints thereby reducing the need for user configuration of scrape targets.
- Employed React to engineer an interactive dashboard of draggable, resizable, and reusable graphs with live state management.
- Engineered a Node/Express back end, minimizing overall application overhead while providing a flexible middleware chain for handling a wide variety of user requirements such as CRUD calls to a PostgreSQL DB, live-updates of configuration files on the local machine, and discovery of Kafka brokers from a seed broker through an open-source Kafka library.
- Leveraged Electron to consolidate application technologies to ensure cross-platform compatibility, providing a stable application for Kafka engineers working in a variety of operating environments and a more potent application that leverages Electron's access to the local filesystem to dynamically modify Kafka/Prometheus/Grafana YAML configuration files and initialize Docker processes.
- Authored automated client and server-side Jest tests in order to improve the robustness of the codebase and to prevent regressions.
- Utilized Prometheus as a querying and scraping tool for Kafka cluster metrics for visualization with Grafana, providing horizontal scalability for monitoring and alerting on multiple Kafka clusters, simplifying the user interface through templating for data sources.

Freelance:

Lead Software Engineer | Beers Flower Shop - E-commerce and Business Management Application
- Re-implementing a legacy codebase in Next.JS 13+ with TypeScript, leveraging Next's caching and routing architecture to reduce sever load while maintaining SEO optimization via server-side rendering.
- Designing a seamless, responsive shopping experience by crafting reusable styled components based upon both Material UI components and vanilla HTML components in order to reduce client-side dependencies.
- Crafting custom hooks and contexts to create reusable business logic, reducing repetitive code and providing more intuitive syntax.
- Authoring Jest tests with React Testing Library to automate testing flow and improve codebase resiliency.
- Integrated Google cloud services for server- and client-side management of geospatial data to optimize route efficiency and to provide an intuitive interface for both client and retailer in managing order fulfillment.
- Implemented PostgresSQL (Supabase) for both application and authentication services, providing robust security of user data by utilizing PSQL row-level security policies, database management of cookie/session data for tracking shopping cart and user authentication/authorization flow, and integration with OAuth2.0 and standard SMTP email verification.

Software Engineer | Systemazing - System Design Feedback Application
- Architected a Typescript/Express server, providing a strongly typed backend with improved stability, error handling, and predictability in managing complex state data from parsing user-created diagrams into a LLM-readable string format for queries.
- Built RESTful API endpoints to interact with the OpenAI API with inputs generated by parsing user-created diagrams.

Education & Other Experience:

Brandeis University | BA German, Economics, *cum laude (2012)*
Relay Graduate School of Education | MS Teaching *(2015)*
Codesmith | Advanced Residency for Software Engineering *(2023)*
Columbia Secondary School | Math Teacher *(2013-2015)*

HD Tutors | Lead Tutor *(2015-2024) - Subjects: K-12 Mathematics,*
English/Reading, History, Sciences
Self Employed | Audio Engineer, Musician *(2015-current)*

Talks/Publications:

Tech Talk - Message Brokers: Apache Kafka | Bractlet
Medium - "How to (Actually) Configure a Kafka Cluster for Testing/Development" | January 2024

Interests:

I am an active singer-songwriter/audio engineer with dozens of streams! I also host an open mic night in Hoboken, which lets me foster a community and provide local musicians with a space for their craft.