Mo Sebbagh Software Engineer

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TECHNICAL SKILLS

TypeScript · JavaScript (ES6+) · React.js · Node.js · Express.js · RESTful APIs · Relational Databases · Deno · Fresh . Preact · Oak · NoSQL ·SQL Deno Websockets · Chart JS · CSS3 ·Tailwind CSS ·Bootstrap · HTML5 · Git · Webpack · Next.js · GraphQL · Vite· Python · C++ · Wordpress

EXPERIENCE

Software Engineer | Denosoar 2022 - Present

- An open source memory tool for tracking potential memory leaks, and displaying real-time memory statistics in easy-to-read charts.
- Leveraged React Fresh's just-in-time rendering and the component island pattern to optimize client-side rendering, reducing page load time by >50% , while still allowing for server-side rendering and a highly resilient application.
- Utilized Preact to develop a lightweight, browser-based application with fast rendering, efficient memory usage (less than 3MB of memory consumption) and compatibility with React's API to rapidly build and deploy the application with no build tools required.
- Developed a Deno and Oak server to efficiently mine and transmit memory data via Websocket connection, handling up to 1000 connections without degradation in performance while maintaining optimal CPU and memory usage for reliable operation.
- Implemented Deno's standard Websockets API to establish and maintain persistent client-server communication in a memory mining and transmission application, allowing for efficient and reliable data transfer between the server and clients.
- Created an interactive, real-time chart using Chart.js to visualize heap memory data over time. Improving data analysis to quickly identify memory usage trends and prevent memory leaks, resulting in more efficient resource management and reduced downtime.
- Engineered cross-platform compatibility Denosoar CLI with start/stop recording frequency adjustments,, beta load testing tool, and created a help command to provide users with instructions for all available CLI commands improving efficiency and flexibility.
- Enforced TypeScript's type checking to catch errors early in the development process, resulting in a more stable and maintainable codebase. This approach helped increase the efficiency of the code review process by >30% and reduced debugging time by >20%.

Web Developer | Freelance 2019 - 2022

- Utilized JavaScript and modern web development frameworks like React to create highly-performant websites for clients resulting in a >25% increase in customer engagement and a >15% improvement in user experience optimization.

Physics Teacher| Computer Science mentor | North Star Academy Charter School 2018 - 2022

- Used Simulation Software and Video analysis software to enhance instructions by providing students with hands-on experience
- Created a CMS based web application for students to view homework solutions and access lecture notes, enabling them to easily share and access course materials in a centralized online platform, resulting in 20% timely homework submission increase.
- Designed custom algorithms in JavaScript to facilitate data analysis and perform complex calculations during hands-on experiments conducted by students, enhancing students' understanding of scientific concepts.

OPEN SOURCE CONTRIBUTIONS 2021 - 2022

SMART GOAL App |Designed for high school teachers to create S.M.A.R.T Goals for their classes 2021

- Used React to create a responsive single page application with modular and scalable code by utilizing reusable components and react Hooks, and improving application performance and maintainability through state management and context API.
- Designed and built a Node.js/Express RESTful API to handle HTTP requests to various endpoints, based on the middleware design pattern, routers and controllers to facilitate the request-response cycle and connect client side to database.
- Optimized Webpack configuration by implementing code splitting, minification, and uglification techniques to improve the application's load time and overall performance, resulting in a faster and more seamless experience for the end user.
- Implemented a non-relational database to store user data in a BSON document with full CRUD functionality for flexible document schema that allows fast queries, and frequent application change.

GameBetter | Online game board to improve cognitive functionGameBetter 2022

- Built a highly efficient Postgres database schema and queries, incorporating security measures and disaster recovery planning, resulting in improved query performance, resource utilization, and data integrity.
- Constructed a robust encrypted user login and registration flow using Bcrypt with server-side verification to authenticate users and persist login with HTTP-secure cookies and sessions using Express.

EDUCATION

New Jersey Institute Of Technology, Newark, NJ | B.S, Applied Physics –Optical Science and Engineering 2017

Relevant Courses: Python Data Structures, C++, Partial Differential Equations, Matlab, LabView, Machine Learning, Probability and Statistics, Mathematical Methods for Scientists and Engineers, High Power Laser and Photonics Applications, Computer Science

PUBLIC TECH TALKS (Sponsored)

Deno | Speaker @ Jeeny and Bractlet Software Engineer Speaker Series 2022

- Spoke on the advantages of Deno over Node.js, including its convenience for TypeScript projects, and demonstrated how Deno solves existing inconveniences in Node.js projects.

INTERESTS

Playing Pool and Petanque | a member of APA (American Pool Association) | a member of FPUSA (Federation of Petanque USA)