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Marko Bachvarovski

Education

University of Toronto – Toronto, Canada *September 2019 – June 2024*
Honours Bachelor of Science in Physics, Computer Science and Spanish

Professional Experience

Back End Developer at Savi Finance (Startup)
September 2022 - Present
Microservice based financial application, designed to help people plan and achieve their financial life goals quicker
- Individually developed and assisted the creation of the architecture for the push notification and messaging microservice, employing a fan-out pattern architecture and a dead-letter queue for handling unsuccessful deliveries
- Created the app's first recurring job execution pipeline, designed to enhance transaction data by using a vendor retrieval mechanism based on the computation of the Levenshtein distance from user input to match to the best fitting vendor in our database, enabling users flexibility when entering transactions
- Integrated Google authentication for third-party APIs within the application, enhancing ease of use and user security by transferring the authentication responsibilities to Google and reducing possible system vulnerabilities

Back End Developer at Insurance Systems Inc. (Intern, later developer)
April 2022 - August 2022, May 2023 – Present
Large enterprise application designed to run all phases and fulfill all requirements of an insurance company
- Optimized application performance by writing an algorithm to detect unused variables unable to be freed by the garbage collection mechanism, resulting in a 80% performance increase
- Handled feature implementation under strict time pressure, implementing several features spanning different parts of the software architecture, including but not limited to, document generation, policy creation and resolving existing issue, within a few weeks' timeframe
- Leveraged existing technical knowledge to master company's proprietary technologies, delivering high quality work within the first 2 weeks of employment

Personal Projects

Smart Brain
My first web application, an app that uses machine learning to recognize faces in pictures
- Incorporated it with a third-party API that is able to perform facial recognition. The app sends a request to the API with the image source, and the API responds with the coordinates of the face in the picture, which the app later displays on the screen
- Implemented an authentication mechanism which hashes user data before storing it, increasing user security

Password Checker
A program built for improving my security skills
- The user is able to enter a password which gets hashed using the SHA1 algorithm. The app then makes a request to "Have I been pwned?"'s servers to retrieve all passwords on record whose hashes begin with the same 5 characters
- To preserve k-anonimity, the remainder of the hash is compared locally, ensuring that the entire password never leaves the local environment. If a match is found, the user is alerted that their password has been compromised

Personal Portfolio
My personal portfolio, built predominantly using HTML and CSS

Skills

Proficient: TypeScript, Python, Express.js, MongoDB, GraphQL, JSON RPCs, Git, Async JavaScript, Microservice architecture
Familiar: Java, C++, HTML, CSS, React.js, PostgreSQL, Bootstrap, Jest, nx, AWS APIs, Numpy, Matlab