

Bilal Baig

Software Engineer | Ontario, Canada

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EXPERIENCE

Backend Engineer

June 2024 – Present

Hack For LA (Volunteer)

Los Angeles, California

- Collaborated with a team of researchers, designers and developers to create a Web Traffic Demand Management tool for the LA Department of Transportation using React, Javascript and SQL

Software Development Engineer

February 2022 – March 2023

Amazon

Toronto, ON

- Developed Event Driven Architecture using **Java**, **TypeScript**, and **AWS Services**, processing thousands of daily global inventory events and ensuring precise inventory levels
- Led initiative to automate correcting inaccurate data in inventory stores using AWS Lambda, S3, and DynamoDB, resulting in the mitigation of business impacts and a **15% reduction in time spent on weekly manual tasks**
- Designed a second iteration of an inventory tracking system, utilizing AWS Step Functions workflow, **enhancing operational accuracy by 40%**
- Mentored junior engineers through 1:1 biweekly meetings, giving suggestions on code structure, clarity, and design, leading to an **overall increase in team productivity and agility**
- Automated cleaning up 100s of weekly log files with CronJobs, mitigating service certificate errors due to storage capacity during yearly code freezes

PROJECTS

Quotetaking | *Swift, SwiftUI, Core Data, ChatGPT API* | [GitHub](#) | [App Store](#)

- Created an iOS app to conveniently save quotes from thousands of books using Swift and SwiftUI
- Improved user satisfaction** by leveraging OpenAI's ChatGPT API to provide users quote explanations and context
- Enhanced user experience** by integrating Vision framework's OCR technology for quick image-to-quote extraction

Latent Semantic Analysis | *Python, NumPy, SciPy, Sci-Kit Learn, matplotlib, LaTeX* | [GitHub](#)

- Formulated a Latent Semantic Analysis algorithm for processing a vast English Wikipedia text corpus of 490,000 documents on Jupyter notebook
- Crafted a PPMI matrix derived from a sparse matrix representation of the top 10,000 words across all documents
- Built a Matrix Factorization algorithm implementing Stochastic Gradient Descent from scratch using NumPy

Real time Chat App | *Golang, React.JS, MongoDB, JavaScript, HTML, SCSS, Redis, Docker* | [GitHub](#)

- Architected a scalable real-time chat application leveraging Golang for the back-end and React for the front-end
- Implemented WebSocket technology to enable instant communication between users increasing app functionality
- Improved application responsiveness and scalability** by devising effective methods to manage server and user data with MongoDB and applying Redis' Pub-Sub pattern for asynchronous messaging

TECHNICAL SKILLS

Languages: Java, TypeScript & JavaScript, Swift, SQL, Python, Golang, NoSQL, Haskell, C++, C, C#

Developer Tools and Platforms: AWS, Git, Docker, Redis, MongoDB

Libraries and Frameworks: SwiftUI, Core Data, React, pandas, NumPy, Matplotlib, Selenium, SciPy, Sci-Kit Learn

EDUCATION

York University

December 2021

Bachelor of Science in Computer Science

Toronto, ON

Courses: Database Systems, Big Data Systems, Data Mining, Machine Learning, Digital Audio Design, 3D Computer Graphics

HOBBIES & INTERESTS

Motorcycles & Cars, Philosophy, Fitness, Literature, Playing guitar & piano, Video Games, Building LEGO Sets, Tabletop Role-Playing Games