Bilal Baig

Software Engineer | Ontario, Canada

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Experience

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 10%** by leveraging OpenAI's ChatGPT API to provide users quote explanations and context
- Employed the Core Data framework to store, manage and organize thousands of quotes
- **Enhanced user experience by 60%** 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
- Constructed a sparse matrix representation encompassing the top 10,000 frequently occurring words across all documents
- Crafted a PPMI matrix derived from the sparse matrix of the most prevalent 10,000 words
- 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 over 10,000 users **increasing in app functionality**
- **Improved performance** by devising effective methods to manage server and user data using MongoDB
- **Enhanced application responsiveness and scalability** by applying **Redis**' Publish-Subscribe 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