

Bilal Baig

Software Engineer | Ontario, Canada

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EXPERIENCE

Software Development Engineer

February 2022 – January 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
- Spearheaded the replacement of an obsolete inventory tracking system with **AWS Step Functions** workflow, enhancing operational accuracy by **40%**
- Devised and executed operational tools using **AWS Lambda**, **S3** and **DynamoDB**, **freeing up 20% of on-call hours** and mitigating business impacts due to discrepancies in data stores
- Mentored and guided junior engineers, facilitating their skill development and ensuring team's success **increasing team productivity by 30%**
- Examined and corrected failure points via **AWS Cloudwatch**, maintaining operational excellence and **improving operational efficiency by 25%**

PROJECTS

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

- Created an iOS app to conveniently save quotes from **thousands** of books using **Swift** and **SwiftUI**
- Leveraged **OpenAI's ChatGPT API** to provide users quote explanations and context **improving user satisfaction by 15%**
- 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](#)

- Engineered a scalable real-time chat application leveraging **Golang** for the backend and **React** for the frontend
- Implemented **WebSocket** technology to enable instant communication between over 10,000 users result in a **70% increase in app functionality**
- Devised effective methods to manage server and user data using MongoDB **improving performance by 35%**
- **Enhanced performance and scalability by 50%** 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