He Qi

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SUMMARY

Highly skilled Ph.D. candidate with solid knowledge of algorithms, OOD, and programming. Strong knowledge of Java, Go, Spring Boot, and React. Professional experience in processing large-scale data with analytical skills. A wide range of computer science project experience in full-stack web applications, cloud services and mobile development.

TECHNICAL SKILLS

- **Programming languages:** Java, Python, C++, Go, JavaScript, HTML/CSS, SQL, NoSQL, R-Studio, SAS.
- **Databases and Tools:** AWS EC2, AWS RDS, Google Cloud, Linux, Docker, Multithreading, Git/Github.
- **Web/Mobile Development:** Spring Boot, Hibernate, React, Java Servlet, Node.js, REST API, Android.

WORK EXPERIENCE

Oracle America, Inc, Remote, USA   **Software Engineering Intern**   **May 2022 - Aug. 2022**

- Designed and built an Oracle OBIEE dashboard to handle millions of archived data.
- Worked in a team environment to write code, test, document, and deliver search and filter functionality.
- Collaborated with multiple teams to confirm hundreds of column data sources, and documented for team reference.
- Created high-quality reports to help improve managers' operation efficiency and supply chain activities' productivity.
- Resolved long-standing conditional filter problems for existing dashboards due to data source mismatch.
- Developed a cron job-like agent to generate manager-level reports automatically, which saves 50%-time cost.
- Optimized the dashboard performance on landing and browsing by refactoring HTML and SQL code.
- Hands-on experience on Oracle Autonomous Database in Oracle Cloud.

EXPERIENCE

A Personalized Twitch Video Recommendation Engine Based on AWS

- Designed and built a full stack web application for users to browse Twitch content(stream/video/clip) and got recommendations based on users' favorite history in the **Java EE** platform.
- Created a user-friendly web page with **ReactJS** and **Ant Design**.
- Implemented the backend services to support content search, favorite, and recommendation through **Java Servlet** and **Apache Tomcat**.
- Built **RESTFUL APIs** that provide the functionality to search different Twitch resources and recommend similar items to users.
- Created a **MySQL** database on **AWS RDS** to store users' profiles, favorite history information, etc.
- Extracted the game information from the Twitch content to calculate content similarity and implemented a content-based recommendation solution based on it.
- Deployed the whole application to **AWS EC2** to achieve better performance and reliability.
- Used **JMeter** to test the web application bandwidth proving the max throughput of the server is about 50 QPS.

Social Network platform based on Go and React

- Designed and implemented a social network full-stack web application with **Go** and **React** for users to upload and search for photos and short videos.
- Implemented functionalities for users to upload media files and save them to **GCS**.
- Improved the authentication using token-based registration/login/logout flow with React Router v4.
- Used server-side user authentication with **JWT** to protect upload and search services.
- Developed the backend services in Go and deployed them to **Google Cloud** (Google App Engine).
- Utilized **Elastic Search** to optimize search functions so users can search recent posts and list individual posts.

Staybooking: An online stay rental application based on React and Spring Boot

- Designed and built a single-page full-stack web application using **React-Bootstrap** and **Ant Design**.
- Implemented backend services based on **Spring Boot** to support stay, upload, delete, search and reserve functionality and used **Spring MVC** to create **REST APIs**.
- Created **MySQL** database to save user-generated data and stored media files on Google Cloud Storage.
- Developed location-based stay search by creating geo-indexes on **Elastic Search**.
- Implemented JWT server-side user authentication based on the **Spring Security** framework.
- Deployed the backend service to **Google App Engine** for better scalability and reliability.

Starlink Trajectory Visualization based on React JS

- Built a geo-based visualization dashboard to show the real-time satellite track with **ReactJS** and D3.
- Created UI using **JavaScript, HTML,** and **CSS**.

PRESENTATION & MEMBERSHIP

- **AWS Summit** Washington, DC, 06/7/2023.   **Grace Hopper Celebration** 2023, In person.   **Society of Women Engineers** (SWE).   **Tapia Conference 2023,** In person-Association for Computing Machinery Member (ACM).

EDUCATION

George Mason University (GMU), Fairfax, Virginia, USA   **Aug. 2019 – May 2024 (Expected)**

- Ph.D. in Mathematical Statistics Science (Graduate Teaching Assistant)
- **Relevant Courses:** Data Structure and Algorithms, Java Full Course, System Design, Object-Oriented Design, etc.

The George Washington University, Master of Science, Washington DC, USA   **Aug. 2016 - May 2018**