SHIRUI ZHANG

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EDUCATION BACKGROUND

Northeastern University, Seattle, WA Sept. 2020 - Dec. 2023(Expected)
Candidate for Master of Science in Computer Science GPA: 4.0/4.0

Southeast University, Nanjing, China Aug. 2016 - June 2020
Bachelor of Engineering in Biomedical Engineering GPA: 3.6/4.0

PROFESSIONAL SKILLS

Programming Languages Java, Kotlin, SQL, Python, Golang, C++, MATLAB
Frameworks & Database Spring, SpringBoot, Git, MySQL, PostgreSQL, Linux Shell, Docker

WORK EXPERIENCE

Tencent|*Platform and Content Group(PCG), Software Development Engineer Intern* Jan. 2021 - Apr. 2021
WaterMark Camera Development for Tencent QQ App

- Developed a Watermark Camera with **Java** and **Kotlin** for users to take photos with watermarks.
- Optimized the logic of focusing process, helping embed the face recognition API into the focusing procedure.
- Designed new watermarks with more functions such as displaying weather, updating geographic location in real time.
- Developed a new feature that users can save commonly used locations to **SQLite** for future uses.
- Renewed the logic of the address list so that users could choose their locations for photos more accurately.
- Refactored some of the old functions written with **Java** to **Kotlin** and deleted redundant code, enhancing execution efficiency by 17%.
- Combined data collecting functions with shutter button and other buttons for implementing user behavior analysis.
- Designed new APIs for accessing **Tencent Beacon** to collect data from clients which is used to implement user behavior analysis, advertisement monitoring and **A/B test**. These APIs help increasing DAU(Daily Active User) by 32% (approximately 960,000 new users) after new version was released.

Zhongda Hospital of Southeast University|*Applied Research Intern* July 2019 - May 2020
ICU Patients Data Platform Development

- Worked on a reinforcement learning platform to optimize the treatment strategy for ICU patients.
- Wrote **SQL** scripts to extract physiological indicator data and doctor's order data from MIMICIII and eICU databases.
- Built a reinforcement learning environment with **MATLAB** to obtain the optimal treatment strategy.
- Evaluated the model using the doctor's orders as a standard, maximizing the WIS (weighted importance sampling) value used in the evaluation to obtain the optimal treatment strategy.

PROJECT EXPERIENCE

Distributed Key-Value Storage Service June 2021 - Present

- Built a distributed fault-tolerant **K-V** data storage service with **Golang**.
- Implemented **Raft** algorithm to ensure fault recovery and log consistency within the server cluster.

Personal Blog Management System Based on SpringBoot Oct. 2020 - Nov. 2020

- Built a blog management system based on **SpringBoot** and **MySQL** for users to manage their blogs.
- Implemented function of identifying the login status, denying users who do not log in their own account.
- Integrated **Kaptcha** with **SpringBoot** to implement the function of user verification before login.
- Developed the front end with **Bootstrap** to display blogs, implementing comment operations.
- Stored blog data and user data with **MySQL**, designed and implemented **CRUD** operations of blogs with **RESTful** API.

Airplane War Game Based on Python Dec. 2018

- Programmed with **Python**'s Pygame package to make aircraft war games.
- Implemented free movement of airplanes in the scene, bullets firing, random showing up of enemy airplanes, collision detection and other functions.
- Added airplane upgrade, breakthrough mode, and Boss models to make the game more complete and feasible.

DataCastle "Jintu Cup" National Big Data Competition Oct. 2018 - Nov. 2018
Team Lead

- Programmed with **Python** for data preprocessing, filtering, deduplication, and other preprocessing tasks based on 400,000 high school questions data.
- Used **TF-IDF** algorithm to vectorize the text data, getting keywords and weight values of each question.
- Achieved automatic identification of two types of questions based on **factor decomposition machine**, optimizing the recognition accuracy rate up to 96% and the **AUC** value to 0.97.