Zhuo (Joey) Wei

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SUMMARY OF QUALIFICATIONS

- Master's degree candidate with the ability to tackle challenges, solve technical problems, and deliver new ideas.
- 3 years of solid coding experience in full-stack Web App and Mobile App Development (IOS), Object-Oriented Design/ Programming, Database management, Big Data Processing, Cloud Computing, Distributed Systems, and Design Patterns (MVC, Singleton, etc.).
- **Languages**: Java, Python, Swift, JavaScript, HTML5/CSS3, JSX, SQL, R, Shell Scripting.
- **Frameworks and Tools:** MySQL, MongoDB, Spring Boot, Node.js, React, Redux, Express, Passport.js, Spark, Hadoop, Hive, MapReduce, Numpy, Scipy, Pandas, Junit, Linux, Firebase, AWS EC2, Git, Tableau, Maven.

EDUCATION

Washington University in St. Louis, the United States Jan 2019-May 2020
Master of Science in Data Analysis and Statistics (Specialized in software Engineering) | GPA: 3.7/4.0
Coursework: Data Structures & Algorithms | Database Management Systems | The Web Developer Bootcamp | Mobile Application Development | Cloud Computing with Big Data Applications | Artificial Intelligence | Optimization

China University of Petroleum, China Sep 2013-Jul 2017
Bachelor's degree in Petroleum Engineering

WORK EXPERIENCES

Engineer Associate Internship | China National Petroleum Corporation USA, Houston, TX May 2019-Aug 2019
Conducted Spark based 2013-2019 US hydraulic fracturing wells analysis to provide exploration optimization suggestions.

- Developed a pipeline operation for data pre-processing by using **Numpy, Pandas** in **Python**.
- Designed geo-location clustering by implementing k-means in **Spark** and deployed to **AWS EC2** to handle 3GB data with over 1,000,000 records.
- Extracted operation feature relationships using **Hive**. Visualized and analyzed the clustering results and target area's operation features using **Plotly** (Python) and **Tableau** with the team.

PROJECT EXPERIENCES

Full Stack Web Application for Project Management (https://zhuo-ppmtool.herokuapp.com/**)**

- Designed and implemented the application supports users to manage their personal projects, and deployed on Heroku.
- Built **RESTful** Service on **Spring Boot** and utilized **MySQL** database on ClearDB to persist data.
- Used **Axios** with **ReactJS** to develop an interactive web page (Bootstrap, CSS).
- Integrated **Redux** and **React Router** to manage states of the application and handle real-time data.
- Secured the application by user authentication and authorization with **Spring Security** and **JWT**.

Database Management System Implementation in Java

- Provided basic query function by implementing query tree generation and execution processes.
- Built a relational database index that optimized the speed of data retrieval operation by implementing the B+ tree.
- Achieved thread-safety functionality by implementing strict two-phase locking using BufferPool and Transactions.
- Designed a series of unit tests (**JUnit**) to ensure the performance of the database.

Park-ner (https://park-ner.herokuapp.com/**)**

- Developed a full-stack application that lets users posting, finding, and commenting on the parks' information.
- Created an interactive User Interface with **Bootstrap**, **HTML/CSS**, and **JavaScript** for responsive layout.
- Built RESTful APIs contained CRUD features in **Node.js** using **Express** and mongoose.
- Implemented **MongoDB** infrastructure to store data, and used Google Maps API to render park location.
- Achieved user authentication and authorization by **Passport.js** and **middleware** configuration in Express.

Movie Searching IOS Application

- Implemented a real-time mobile app for movie information searching and saving, by using **Swift** and **Firebase**.
- Improved UI/UX design by providing movie gallery view, detailed view, and display order selection with **UIKit**.
- Achieved users' favorites list storage by using Firebase and provided user authentication using Firebase Auth APIs.
- Applied asynchronous function to achieve multi-threading caching to speed up loading procedure by **35%**.

Autonomous Pacman Player in Python

- Implemented DFS, BFS, Uniform cost, and optimized A*'s heuristic to find a path for Pacman through a maze.
- Designed multiple agents with Minimax and Expectimax. Optimized evaluation function based on game states.
- Applied Reinforcement learning algorithms and improved agent performance by 50% and shortened 80% training time by using Approximate Q-learning algorithm.