

Zhuo 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.
- Solid software developer with 3 years of coding experience in Web App and Mobile App Development, Object-Oriented Design/ Programming, Database Management, Cloud Computing, and Design Patterns.
- **Languages:** Java, JavaScript, HTML5/CSS3, Python, Swift, SQL, R, Shell Scripting.
- **Frameworks and Tools:** Spring Boot, Node.js, Docker, Kubernetes, Express, Passport.js, React, Redux, Bootstrap, MySQL, MongoDB, AWS, Git, Maven, Firebase, Spark, Hadoop, Hive, MapReduce, Junit, Linux, Tableau.

EDUCATION

Washington University in St. Louis, the United States

Sep 2018 – 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

Software Engineer Intern | China Mobile Communications Group Co.,Ltd, Beijing

May 2018 – Sep 2018

- Developed a project management application to enhance work efficiency and shrink the development cycle by **5%**.
- Built **REST** APIs with **Spring Boot** and **maven** to handle client-side HTTP requests and responses.
- Utilized **MySQL** database and configured data source, **JPA**, and Hibernate to increase data query efficiency.
- Developed an interactive front end using React, combined with **Axios** to provide promise-based communication.
- Integrated **Redux** and **React Router** to optimize control flow and increase maintainability and efficiency.
- Implemented auto-email services with SMTP to save 30% of the time spent in the email reports.
- Improved user experience by presenting the project progress with Gantt based visualization JQuery library.
- Achieved the authentication using token-based registration/login/logout flow with React Router and server-side user authentication with **JWT** and Spring Security.

Associate Engineer Intern | CNPC USA, Houston, TX

May 2019 – Aug 2019

Conducted Spark-based analysis to optimize the exploration for increasing production by 20% (theoretically).

- 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 EMR** with S3 bucket to handle 3GB data with over 1,000,000 records of 2013-2019 hydraulic fracturing in US.
- Extracted operation feature relationships using **Hive**. Visualized and analyzed the clustering results and target area's operation features with the team using Python Plotly and **Tableau**.

PROJECT EXPERIENCES

Park-ner (prototype: <https://zhuowei-parkner.herokuapp.com/>)

- Developed a web 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**.
- Implemented **MongoDB** to store data and used **mongoose** to manage the models.
- Secured the application by user authentication and authorization with **Passport.js** and **middleware** configuration.
- Built a Docker Registry by connecting database and app **Docker** images. Created Elastic **Kubernetes** Service on **AWS**.

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.

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.