# 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, Go, SQL, R, Shell Scripting.
- **Frameworks and Tools:** MySQL, MongoDB, Spring Boot, Java Servlet, Node.js, React, Redux, Express, Passport.js, Vue.js, Bootstrap, Android SDK, Docker, Kubernetes, Spark, Hadoop, Hive, MapReduce, Junit, Linux, Firebase, GCP, AWS EC2, Git, Tableau, Maven.

## 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

- 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 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 using Plotly (Python) and **Tableau** with the team.

## PROJECT EXPERIENCES

**Park-ner (**https://zhuowei-parkner.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**.
- Achieved user authentication and authorization by **Passport.js** and **middleware** configuration in Express.
- Implemented **MongoDB** infrastructure to store data, and the functions for users to manage posts and comments.

**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 by using Approximate Q-learning algorithm.