ZHEN LIU

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SUMMARY

Seeking a full-time software engineer position starting from June 2021.

Master degree candidate with strong programming, analytical and designing skills. A wide range of project experience in web development, algorithm design, and data processing. Strong knowledge of computer science and solid programming skills in Java, C++, SQL, HTML/CSS, and JavaScript.

EDUCATION

Dalhousie University, Halifax, NS GPA: 4.13 / 4.30
Master of Computer Science (thesis-based) January 2019 - April 2021(Expected)

Shandong University of Finance and Economics, Jinan, China GPA: 3.61 / 4.00
B.S. in Information Management and Information System September 2014 - June 2018

TECHNICAL SKILLS

Programming Languages	Java, JavaScript, SQL, C++
Databases and Cloud	MySQL, AWS EC2, AWS Lambda
Web/Mobile Development	Java Servlet, HTML, CSS

WORK EXPERIENCE

SpryPoint, Inc April 2019 - November 2019
Research Assistant *Halifax, NS*

· Used JDBC to integrate data on a household basis and clean the incomplete data.
· Designed and analyzed daily electricity consumption trends based on the smart meter data from 2016 to 2019 for thousands of residents of Prince Edward Island, Canada.
· Implemented diverse algorithms on different operating systems by using Java, MATLAB, PostgreSQL with a 20% improvement in user efficiency and developed a new feature for the company to offer personalized electricity bill packages to customers.

RESEARCH EXPERIENCE

Range Mode Query Research

· Implemented different range mode query algorithms and compared their running time and space occupation using C++ language and Ubuntu Server.
· Analyzed 12G high-dynamically real word data from Amazon Product Review Dataset for querying data and finding the mode based on distinct ranges.
· Utilized compact data structures to improve $O(\sqrt{\log_2 n})$ running time and save $O(\log_2 n)$ space.

PROJECT

Job+: A Personalized Job Recommendation System

GitHub: https://github.com/liuzhen0704/JobRecommendation

· Designed and implemented an interactive web application for users to search and apply for available job positions based on their location.
· Performed some concise and interactive UI pages and implementation using HTML/CSS/JavaScript.
· Implemented RESTful APIs using Java servlets, retrieved job descriptions using Github API, and stored data in MySQL.
· Explored multiple recommendation algorithms and extracted keywords from job descriptions to implement a Content-Based algorithm by using MonkeyLearn API.

· Deployed to Amazon EC2 for more availability.

Hermes: a Spring and Hibernate based Shopping and Ordering system

· Built a web application based on Spring MVC to support item search and listing (dependency injection, inversion of control, REST API etc.).
· Implemented security workflow via in-memory and JDBC authentication provided by Spring Security.
· Utilized Hibernate to provide better support of database operations
· Developed a Spring Web Flow to support item ordering.

Starlink: React JS based Starlink Trajectory Visualization

· Designed and developed a visualization dashboard using ReactJS and D3 to track satellites in real-time based on geo-location.
· Built location, altitude, and duration based selector to refine satellite search.
· Animated selected satellite paths on a world map using D3 to improve the user-friendliness.
· Deployed the dashboard to Amazon Web Service for demonstration.

Tinnews: a Tinder-like News App

· Designed the Instagram Flavor News app based on Google Component Architectural MVVM Pattern.
· Implemented the bottom bar page navigation using the JetPack navigation component.
· Utilized 3rd party CardStackView(RecyclerView) to support swipe gestures for liking/disliking the news.
· Built the Room Database with LiveData ViewModel to support a local cache and offline models.
· Integrated Retrofit and LiveData to pull the latest news data from a RESTFUL endpoint (newsapi.org).