SULONG ZHOU

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SUMMARY

Inquisitive computer science graduate with solid **full-stack** software engineering track in web application design, development and testing, and 5 years of Ph.D. research experience in machine learning applications. Expert in programming skills in **Java**, **Rest API**, **Spring**, **NLP**, and Agile Web Development. Proficient in communication, analytical thinking and learning new technologies.

EDUCATION

University of Wisconsin-Madison **GPA: 3.64** **Madison, WI**
Ph.D.: Environment & Resources (Full Scholarship) *Sep 2015 – May 2021*
Master of Science: Computer Science (Teaching Assistantship) *Sep 2019 – May 2021*
Dissertation: "Machine Learning Based Approaches for Geo-spatial Analysis"

Minzu University of China **Beijing, China**
Master of Engineering: Environmental Science *Jul 2015*
Bachelor of Science: Ecology *Jul 2010*

COURSES & SKILLS

Courses: Artificial Intelligence, Machine Learning, Big Data, Software Engineering, Data Structure, Algorithm, Operating System, Geo-database, Data Visualization, Spatial Analysis, Cartography, Advanced Statistics, GIS Application, Remote Sensing, Image processing
Skills: Java, C/C++, JavaScript/React, Restful, AWS, NLP, Spring, Hibernate, Linux, Spark, Hadoop, MapReduce, TensorFlow and SQL

PROJECTS

Personal Event Recommendation System & Ticket Search Engine | Git: https://github.com/MoonSulong/EventRecommendation
- Designed and maintained an interactive web page for clients to search events and purchase tickets **(HTML/CSS/JavaScript)**
- Researched multiple recommendation algorithms and applied **Content-based Recommendation** to improve the accuracy of match while solving cold start issues based on user profile, search history, favorite records and real-time locations
- Created Java servlets with **RESTful** API **(Apache Tomcat)** to handle HTTP requests and responses
- Implemented interfaces for both relational and NoSQL databases **(MySQL/MongoDB)** to store real business data for flexibility
- Deployed server to **Amazon EC2** to handle 160 QPS tested by **Apache JMeter**

React & Spring & Hibernate-based YouTube Video Manager Panel | Git: https://github.com/MoonSulong/YouTubeEducation
- Designed an interactive video manger panel to search, favorite, tag and add notes with **React**, **Redux** and **Ant Design**
- Built backend based on **Spring MVC** to achieve dependency injection and inversion of control, and fetch videos with YouTube API
- Implemented a security workflow via in-memory and JDBC authentication provided by **Spring Security**
- Utilized **Hibernate** to maintain persistent database and accelerate crucial operations, such as database connection and query execution

Comparative analysis of NewSQL database system | Git: https://github.com/MoonSulong/TPC-NewSQL
- Deployed **MemSQL**, and **CockroachDB** with a small cluster on CloudLab to research distributed **NewSQL** database
- Benchmarked throughput and latency with a warehouse-centric order processing application generated by **TPC-C** protocols

RESEARCH & TEACHING

Department of Computer Science **Madison, WI**
Teaching Assistant *Jan 2020 – Present*
- Introduce students to important concepts, algorithms and data structures for Object-Oriented Programming in **JAVA**, such as searching and sorting, abstract data types, generic interfaces (parametric polymorphism), and complexity analysis
- Design and test programming assignments that require writing and developing multi-class (file) programs using interfaces, generics, and exception handling to solve challenging real-world problems

Nelson Institute for Environmental Studies **Madison, WI**
Project & Research Assistant *Jan 2016 – Present*
- Apply cloud computing for satellite imagery classification with **Google Earth Engine API** and **TensorFlow** | Link
- Design and develop a cross-platform mobile application with **QML** to harvest real-time data during hurricane events | Link
- Investigate and process social media (twitter) data with machine learning based approach (**LDA**) for latent topics analysis

PUBLICATION

Zhou, S, Kan, P., Silbernagel, J. and Jin, J., 2020. Application of Image Segmentation in Surface Water Extraction of Freshwater Lakes using Radar Data. ISPRS International Journal of Geo-Information, 9(7), p.424.
Zhou, S, Kan, P., Huang, Q. and Silbernagel, J. 2020. A Guided Latent Dirichlet Allocation (LDA) Model to Investigate Real-time Latent Topics of Twitter Data during Hurricane Laura. (Incoming)

AWARDS

- Student Scholarship (2019 ESRI National Geo-design Summit, twenty winners in thousands of attendees) *Nov 2018*
- Incubator Grant Award (Institute for Regional and International Studies, one winner each year) *Jun 2017*