

AMBER WANG

(Jie Wang)

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EDUCATION

Duke University

Master of Science, Computer Engineering

Specializations: Software Development Process, Software Design & Construction

Durham, NC

Anticipated May 2018

Shanghai Dianji Univerisity

Bachelor of Engineering, Electrical Engineering & Automation

- National Merit Scholarship, Graduation with Honors
- Academic ranking 1/163 in the program

Shanghai, China

Sept 2012 - June 2016

PROJECTS

Single-Sign-On System

Backend Developer Intern Project, Beijing Yufu Technology Co Ltd

May 2017 - Aug 2017

Beijing, China

- Designed and built a SAML 2.0 identity provider endpoint using Java and Dropwizard framework
- Integrated Central Authentication Service protocol and enabled ticket-based and multi-tier authentication
- Implemented a Json Web Token handler to securely and statelessly transmit information and authenticate users

Big Data Analytics Platform

Independent Project, Duke University

Mar 2017 - May 2017

Durham, NC

- Implemented a real-time data ingestion layer using Kafka with 200k msg/s throughput
- Optimized storage schema for Cassandra and utilized Google Protocol Buffer to speed up data query performance
- Streamed data from Kafka topics and performed computations using Spark every 4 seconds
- Deployed on AWS EC2 instances using Terraform and Ansible to manage provisioning and configuration
- Visualized data by building a dashboard using Node.js from Redis Sub and updated to frontend using Socket.io

Real-time Uber Vehicle Location System

Independent Project, Duke University

Jan 2017 - Mar 2017

Durham, NC

- Developed a traffic simulation system using WebSocket, RabbitMQ, MongoDB and Hibernate in Java
- Built backend services such as location simulator and updater based on microservice architecture
- Implemented REST APIs using Spring MVC, Spring Boot and Spring Data
- Deployed application to Tomcat in automated fashion and dockerized the system in a Vagrant managed VM

RSVP Web Application

Independent Project, Duke University

Mar 2017 - Apr 2017

Durham, NC

- Implemented a scalable server using producer-consumer design pattern on Django in Python
- Improved the performance of the server by over 1/3 using threading and Postgresql query optimizing strategies
- Created a functional and load testing infrastructure with the combination of shell scripts and data files
- Developed web pages in a masonry layout using Bootstrap and Node.js
- Added advanced UI features such as page lazy-loading and real-time search

Optimization of ROLLUP Operation in Apache Pig

Open Source Contribution, Duke University

Apr 2017 - May 2017

Durham, NC

- Implemented an efficient ROLLUP aggregation algorithm using Java and MapReduce programming paradigm
- Evaluated several variants of implementations in terms of their performance and resources usage
- Integrated in PIG experimental branch, achieved more desired trade-off point between parallelism and traffic cost

SKILLS

Programming Languages

Java, C/C++, Python, JavaScript

Devlopment & Deployment

Maven, IntelliJ, Android Studio, Docker, Vagrant, Terraform, Ansible, Jenkins

Web Frameworks

Django, Dropwizard, Spring Boot, Node.js, Angular.js, Bootstrap

Data Storage

Postgresql, Mysql, SQLite, Cassandra, MongoDB, Redis

Data Pipeline Infrastructure

Apache Kafka, Apache Zookeeper, Apache Spark, Apache Mesos