

# AMBER WANG

( Jie Wang )

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## EDUCATION

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### 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

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### 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

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### 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