Hanhan Zhou

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SUMMARY

Current Ph.D. student with strong programming knowledge and a wide range of working and project experience, research areas include machine learning, cyber security and cloud computing.

EDUCATION

The George Washington University, Washington, D.C.   Sept 2019 – May 2023(Expected)
Ph.D. in Electrical Engineering

The George Washington University, Washington, D.C.   Sept 2017 – May 2019
M.S. in Electrical Engineering

Zhejiang Sci-Tech University (ZSTU), Hangzhou, China   Sept 2013 - Jul 2017
B.S. in Electronics and Information Engineering

SKILLS

Programming Language: Object Oriented Design with **Java**, Web Development with **HTML**, **CSS**, **JavaScript**, **Go**, **Python**.
Databases: relational databases (**MySQL**) and NoSQL databases (**MongoDB**)
Framework and tools: **J2EE**, **Spring**, **Android Studio**
Computer Science: Data Structures and algorithms; object-oriented programming; Distributed Systems design and development (**MapReduce**)

WORK EXPERIENCE

App Development Intern, *AdviceCoach LLC, New York, NY*   Jun 2018 - August 2018
- Designed and developed a mobile-friendly website using **React.js** and **Redux**, allowing users to edit and to create playbooks on their mobile phones' browser before installing the app.
- Implemented REST APIs, which allows the frontend to interact with the backend server, for customizing the playbook, sending message to other customers and receiving feedback, etc.
- Tested app with the latest version, debugged and improved user experience based on users' feedback.

Embedded Software Engineer Intern, *Lanxum Gushenxing Hangzhou, China*   Dec 2016 - Mar 2017
- Worked in a group of six software engineers responsible for designing and testing industrial RTU (Remote Terminal Unit) and ZigBee Modules.
- Implemented customized models of industrial firewalls like anti-sniffing, enhanced whitelist (using snort etc.) based on clients' requirements.
- Designed preset safe configuration rules on a **Node.js** based monitoring portal Website.
- Performed safety check for clients' network robustness and security with GE Achilles.

SELECTED PROJECTS

Weekend: A Java Web Service Development for nearby Event Search and Ticket Recommendation
- Improved personalized recommendation based on search history and favorite records.
- Applied Elastic stack (**Elastic Search**, **Logstash**, **Kibana**) for user profiling and further analysis.

Back End:
- Created Java servlets with **RESTful** APIs to handle HTTP requests and responses.
- Built relational (MySQL) and **NoSQL** databases (MongoDB) to capture real business data from Ticketmaster API and store user data.
- Designed algorithms (e.g., **content-based** recommendation) to implement events recommendation.
- Deployed the server to **AWS EC2,** which can handle 160 queries per second tested by **Apache JMeter**.

Front End:
- Developed an interactive web page for users to search events and purchase tickets based on their geo-location with **AJAX** and **JavaScript**.

Circa: A Geo-index and Image Recognition based Social Network App

Front End:
- Built a geo-based social network web app with **React** JS which can display and upload images and videos.
- Implemented a token-based registration, login/logout and post flow with **React Router v4** and server-side user authentication with **JSON Web Tokens**.

- Implemented features like "Create Post", "Nearby Posts as Gallery" and "Nearby Posts in Map" with **Material UI Design**, **GeoLocation API** and **Google Map API**.

Back End:
- Built a scalable web service in **Golang** to handle requests and deployed to Cloud (Google App Engine flex).
- Utilized **ElasticSearch** (on Google Compute Engine) to provide geolocation-based search functions so that users can search nearby posts within a certain distance (e.g. 200km).
- Used **Google Dataflow** to implement a daily dump of posts to **BigQuery** table for offline analysis.
- Applied a keyword-based spam detection using BigQuery on data at the post level and user level.
- Trained a face detection model using **Cloud ML API** and **Tensorflow** and integrated with the **Go** service.

AliDada: A Spring and Hibernate based online Shopping system
- Used Spring framework to build a web application for online shopping.
- Built a web application based on Spring **MVC** (dependency injection, inversion of control, REST API etc.) to support item searching dataflow.
- Used Spring Security to implement **OAuth2.0** based authentication.
- Utilized **Hibernate** to provide better support of database operations.
- Developed a Spring Web Flow to handle item order confirmation and checkout flow.
- Integrated an ad bidding system based on second highest bid to deliver ads on website.

Tin-news: A Tinder-like News App
- Designed the Instagram Flavor News app based on **MVP** architectural pattern.
- Implemented **ViewPager** with **BottomBar** that holds News/Save/Setting Tabs' state in the MainActivity concurrently.
- Utilized Mindorks's **PlaceHolderView** to support swipe gestures for liking/disliking the news.
- Integrated **Retrofit** and **Rxjava** to pull the latest news data from a **RESTFUL** endpoint (newsapi.org).
- Used in-app advertising (**Google AdMob**) to display Google advertisers and keep users engaged.
- Integrated **Google Map** API to display the nearby hot events and navigate to the event.
- Used **Google Firebase** to store and manage UGC including comments, images, descriptions, title, geolocations.