Yanjie He

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Education

- **The George Washington University** — Washington D.C., USA
  Master of Science in Data Analytics (Computer Science track); GPA: 3.59/4.00 — *Anticipated May. 2020*
  - **Courses**: Design & Analysis of Algorithms, Database System II, Information Retrieval System, Advanced Software Paradigms
- **Shanghai University of International Business and Economics** — Shanghai, China
  Bachelor of Arts in Economics; GPA: 3.71/4.00 — *Sept. 2013 – June. 2017*

Relevant Skills

- **Coding**: C, C++, C#, Java, Scala, Python, R, SQL, Scheme/Racket
- **Front-end**: React.js, HTML/CSS, JavaScript, Bootstrap
- **Back-end**: Spring, Play, Akka, Hibernate, MySQL, MyBatis, JDBC, Redis, Linux, Flask, JUnit, Docker
- **Technologies**: Machine Learning, Computer Vision, Compiler Design
- **Frameworks & Tools**: RESTful API, SQLite3, Spark, OpenCV, AWS (EC2, RDS), Qt 5

Experience

- **Software Engineer Intern - Computer Vision** — Reston, VA, USA
  ScientiaMobile, Inc. — *Jun. 2019 - Aug. 2019*
  - **ImageEngine**: ImageEngine (https://www.scientiamobile.com/products/imageengine/) is a framework for mobile devices and website image optimization, widely used by industry leaders, including **Amazon, Google, Oracle, and Willis Towers Watson**. Completing an image classification system from scratch for detecting images which are not suitable for overly compressed.
  - **Software Development**: Developed an image classification system using Python and C++. Built a C++ program for the internal system to use through a pipeline. Completed a web service using Flask providing RESTful API. Managed data of image features on MySQL.
  - **Development Environment**: Standardized the C++ and Python dependencies based on Docker. Deployed and maintained the service on Linux server.
  - **Computer Vision**: Researched how to classify the images which are not suitable for overly compressed. Applied technologies in computer vision using OpenCV. Built a classifier based on the analysis of color pixels and contours of images. Achieved more than **75%** accuracy.
  - **Machine Learning**: Built an SVM classifier to remove irrelevant raster images. The accuracy of the model is **80%**.
- **Research Assistant - Recommender System** — Washington DC, USA
  George Washington University — *Oct. 2018 - Feb. 2019*
  - **Position**: Group research collaborator for Dr. Benjamin Harvey, faculty of George Washington University.
  - **Recommender System**: Developed a graph-based recommender system, offering real-time query service, and utilized collected user behaviors data.
  - **Back-end Development**: Developed the back-end with Java Spring, providing RESTful API; Utilized Hibernate for object-relational mapping; Operated MySQL database to organize the data.
  - **Information Retrieval System**: Developed a web scraper with Python to collect data. Applied NLP to retrieve information from user activities in the browser.
- **Computational Social Scientist** — Washington DC, USA
  George Washington University — *Oct. 2018 - Jun. 2019*
  - **Social Network Analysis**: Worked for Professor Vontrese Pamphile's social science research project. Applied mathematical and statistical techniques to novel data. Measured reputation premium gained from social connections.
  - **Data Analysis**: Reviewed academic papers. Cleaned datasets and run the models using Python, R and Scala. Utilized packages including NetworkX and igraph.

Selected Projects

- **A Compiler and a Virtual Machine**: Developed a compiler for a statically typed language, a bytecode disassembler, and a virtual machine in C++.
- **A Movie Recommender System**: Link: https://yanjiehe.github.io/Movie-Recommender-System/ Developed a responsive web app for retrieving 26,631 movies' information and recommendations. The tech stack for the program is **Scala (Play, Akka, Spark)**. The web service is deployed on the AWS **EC2**. Managed MySQL database on **RDS**.