RUI JIA

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EDUCATION

Georgia Institute of Technology **Atlanta, GA**

Master of Science, Computational Science and Engineering Expected May 2021

Women of Science and Technology Institution, Student Alumni Association (Communication Ability)

Tongji University **Shanghai, CN**

Bachelor of Engineering, GPA: 3.7/4.0 Sept. 2015-July 2019

Excellent student scholarship (2016-2018), Captain of College Debate Team (Leadership and Teamwork)

Study Abroad Program within Bachelor of Science, Data Science National University of Singapore ***Singapore, SG***

SKILLS

Languages: C++, Python, C#, Java, SQL, Linux-Shell, JavaScript, Ability to learn a new language;

Other: OpenCV (Image Processing), Point Cloud Processing, Sklearn, D3.js, Linux, Ubuntu, Git, TensorFLOW, PyTorch, OpenRefine Tableau, SQL, ENVI, LaTex, Mathematica, MATLAB, Spark, Unity 3D.

INTERNSHIP

RIME-Research Institute on Mines and Environment **Montreal, CA**

Software Development Engineer Internship (Intern in Canada) Feb. 2019-June 2019

Developed a service that uses image data to recognize particle size distribution of waste rock, which helps mining researchers in RIME reduce more than 80% labor cost.

- Implemented core algorithms in **OpenCV**, **C++** that extracts diameter information from aggregate waste rocks with 91.3% accuracy.
- Used machine learning models to predict mass of particles through diameter and generated over 500 training data with **python**.
- Built GUI demo using **QT,** based on polynomial regression, ridge regression, to let user calculate particle size distribution curve.
- Presented results to investors and wrote a report about this development. RIME **got funding** from investors to continue this project.
- **Applied** demo software on lab's current mining research.

PROJECTS

Intelligent Transportation System Development (Creativity and imagination) Aug. 2018-Dec. 2018

Leaded a group to develop an information system based on real world multi-source data to guide the transportation of dangerous goods.

- Used varies data sets and scrubbed data with **python** legally from website.
- Used **Numpy**, **Pandas**, **OpenRefine** to clean data and preprocess data. Changed multi-source data into same format with **C++**.
- Designed an intelligent transportation system with **C#** connected to **MySQL** database, and did route planning.
- Predicted bus arrival time with **machine learning models**, Recurrent **Neural Network** and LSTM, and achieved 94.31%.
- Visualized analysis results on web based on **JavaScript**, **HTML5** and **D3.js**.
- **Won** the best business prize from Chinese HUALU Company **(US$ 4285)**

Software Development about Measurement Data Correction (Cooperation project with civil engineering) Apr. 2016-Mar.2018

Developed a service with a group that can automatic correct sensor data, which increased measurement accuracy by 15%.

- Read and processed sensor data with **Java** from motion detector based on serial communication protocol.
- Processed data with mathematic correction models. Predicted displacement value using time series analysis and ridge regression.
- Built GUI demo using **Java**.
- **First Prize of** College Students Innovation and Entrepreneurship Forum. **(3 out of 200+)**

Software Development based on Objected-Oriented Programming

Developed a service that can display and process both Vector and Tiff map information with **C++.**

- Practiced Objected-Oriented Programming in project. Used abstract factory, builder, factory method, observer, state pattern etc.

RESEARCH EXPERIENCE

Indoor Positioning based on Computer Vison (C++, Python) *Research Assistant in Self-Driving Lab.* Oct. 2017-Feb. 2018

- Realized camera calibration and 3D point cloud data processing with **C++.**
- Realized Object Distance Measurement by single camera with python based on Pyramid Scene Parsing **Neural Network**.
- Applied the method into lab's mobile robot car obstacle avoidance.

Land Classification based on Multi-Source Image Data Fusion *Research Assistant in Computer Vision and Remote Sensing Lab*

- Learned domain knowledge needed within two weeks. Feb.2018-June 2018
- Optimized the Two-Brunch Convolutional Neural Network model based on **python**
- Realized fusion of multi-source image data. Land classification accuracy in training data is more than 97%.