Yu Liu

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EDUCATION

Master of Science in Electrical and Computer Engineering 2015 - 2017
Northeastern University, Boston, MA *GPA: 3.83*
Course Keywords: Machine Learning, Parallel Data Processing, Database, Data Structure, Natural Language Processing

Bachelor of Engineering in Automation 2010 - 2014
Harbin Institute of Technology at Weihai, China *GPA: 3.20*
Course Keywords: Mathematical Analysis for Engineering, Probability and Mathematical Statistics, Control System Design

SKILLS

Programming Languages	Python, Spark(pyspark), SQL, Java, C/C++, JavaScript, HTML, Shell Script
Software Tools	PyCharm, VMware, MySQL, Apache HTTP Server, Eclipse, MATLAB, Git
Cloud Tech and OS	OpenStack, Apache Mesos, Azure, AWS, Ubuntu Linux, Windows

RESEARCH & WORK EXPERIENCES

Goodwill Computing Lab Sep/2017 – Jan/2018
***Research & Teaching Assistant**, Northeastern University, Boston, MA*
- Designed and implemented an **anomaly detection** method for an extreme-scale **supercomputer** system log from **Sandia National Labs**
- Teaching Assistant of **Computer Architecture**, helped more than 50 students with office hour, documents and grading

Schneider Electrics Feb/2017 – Aug/2017
***R&D Coop Intern**, Device Intelligent Platform Team, Andover, MA*
- Implemented motor speed **data transmission and monitoring** between local and **Azure cloud** site by implementing a **IoT** function for semantic rule engine (a pre-built app developed by Schneider Electric)
- Hosted a **website** in **Azure cloud** to upload and transfer lua files to local machine
- Deployed cloud computing IaaS software **OpenStack** and **Apache Mesos** on multiple Ubuntu virtual machines as a research part of constructing a distributed embedded system

PROJECTS

Large-scale Supercomputer System Log Anomaly Detection Sep/2017 – Jan/2018
Master Project, Northeastern University
- Did regular expression search on 80 Gigabytes unstructured **supercomputer system log** using **Spark**, windowed the data by time sequence
- Used both event counter and word-embedding approach (**word2vec**) to generate feature vector for single log lines
- Applied machine learning algorithms (**SVM, logistic regression and decision tree**) on generated windows to predict possible anomaly events, applied data resampling methods for extreme **class imbalance** problem

Signal Rain Attenuation Prediction using Self-Evolving Artificial Neural Network Aug/2017 – Nov/2017
Research Project, Northeastern University & College of William and Mary
- Optimized an artificial **neural network** architecture based on **evolutionary algorithm**
- Predicted rain attenuation of earth-space communication system signals, achieved 5% performance improvement

A Movie Recommendation System Oct/2017 – Dec/2017
Parallel Data Processing Course Project, Northeastern University
- Used **collaborative filtering** to build a rating system for movie recommendation based on 21,000,000 movie rating datasets
- Evaluated the performance of **parallel data processing** by increasing the data partition number from 1 to 20 in **Spark** clusters

A Music Library System Sep/2016 – Dec/2016
Database Management Course Project, Northeastern University
- Built a music information recording and recommendation system using **MySQL** and **JDBC**
- Enhanced user-experience with functions such as **'add', 'delete', 'modify', 'search' and 'recommend'** in a JAVA command line app