Yuchen Cao

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EDUCATION

Carnegie Mellon University, School of Computer Science, Language Technologies Institute   Pittsburgh, PA
Master of Science in Biotechnology Innovation and Computation   Sep 2017 - May 2019
- Courses: Distributed System, Database System, Cloud Computing, Computer System

Zhejiang University, Mathematics Department   Zhejiang, China
Bachelor of Science in Applied Mathematics   Sep 2013 - Jul 2017

PROFESSIONAL EXPERIENCE

Uber Tech. | Software Network Team   San Francisco, CA
Software Engineer Intern   May 2018 - Aug 2018
- Built the staging environment for discovery, health check and traffic routing services using Go. Prototyped a custom dns resolver watching updates to staging zookeeper.
- Improved the lint check tool for traffic group configuration of all services at Uber using Python, making the jenkins check and related service 10 times faster.
- Implemented resolver and balancer using grpc for Uber's own naming service client.
- Software Network in Core Infrastructure: make Uber network reliable as running water.

Yitu Tech. | Developing Engineer Team   Shanghai, China
Software Engineer Intern   Feb 2017 - Jun 2017
- Developed GPU computing in face retrieval and comparison using C++.
- Implemented LevelDB in car recognition platform, which supports aprroximate matching with more than 300 QPS.
- Applied FFmpeg into transferring video stream for real time camera monitoring.

PROJECTS

Twitter Analytics Web Service   Feb 2018 - May 2018
- Built a high-performance multi-tier web service on AWS with limited budget using JAVA which can handle more than 20k RPS.
- Implemented ETL on JSON Twitter data set (1 TB) using MapReduce on GCP.
- Designed schema and optimized MySQL and HBase databases to support large scale and strong consistent read/write query under multithreading design.

Lung Nodule Analysis   Feb 2018 - May 2018
- Developed an automatic lung nodule detection algorithm using 888 CT scans from LUNA 2016 dataset.
- Loaded and reprocessed unbalanced raw data using SimpleITK.
- Modified C3D neural network using 8 3D convolutional and 6 pooling layers using PyTorch.
- Trained the model in 30 epochs and delivered 92% accuracy on the test data.

Malloc, Shell, Proxy Lab   May 2017 - Aug 2017
- Implemented my own malloc function with high utility and throughput.
- Realized a tiny shell supporting job control and I/O redirection.
- Developed a small http proxy with cache and multithred handling SIGPIPE.

Concussion Detection Using Temporal Analysis of Speech   Jul 2016 - Aug 2016
Research Exprience with Prof Christian Poellabauer in University of Notre Dame
- Took speech recordings from athletes and extracted temporal metrics from speech data using Python, CMUSphinx, Kaldi.
- Applied machine learning analysis with Logistic Regression and Neural Network into finding patterns that are indicative of a concussion using Matlab with the accuracy of 96.05%.

Optimization of Refugee Crisis   Jan 2016 - Feb 2016
- Calculated the degree of refugee crisis using Analytic Hierarchy Process using Matlab.
- Predicted the future number using Grey Prediction Model together with Neural Network.
- Optimized the arrangement of refugees using a Linear Programming Model.

SKILLS

Languages: GO, JAVA, Python, C++/C, Bash, Matlab, SQL, R, LaTeX
Frameworks: Linux, Git, Zookeeper, Kafka, GRPC, MapReduce