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Heri Zhao

GitHub: https://github.com/zhaoheri

Education

Stanford | GPA: 4.14 — Stanford, CA
Advanced Software System Certificate — Jan 2016 - present

University of Michigan | GPA: 3.6 — Ann Arbor, MI
Bachelor of Science in Computer Science — May 2015

Shanghai Jiao Tong University | GPA: 3.5 — Shanghai, China
Bachelor of Electrical and Computer Engineering — Aug 2015

Experience

Yahoo! Inc. — Sunnyvale, CA
Software Dev Engineer, Video Platform Team — Sep 2015 - present

- Design and deliver a highly scalable content-adjusted video transcoding solution on AWS for all Yahoo videos (thousands videos per day) by leveraging Celery, Django, RabbitMQ frameworks, with up to 70% video bitrate saving and 90% improvement on processing time; Co-inventor for the patent *Chunk Based Adaptive VBR Encoding*
- Design and build an elastic live streaming infrastructure on AWS and Nginx, targeting on serving user generated content broadcasting, Yahoo studio and eCommerce with tens of thousands of concurrent live events; Optimize the end-to-end latency to less than 10 seconds (similar to Facebook and YouTube)
- Design and implement a distributed live event management system with high availability with MySQL, XQuartz and Jetty; This system powers most of Yahoo hosted live events including Yahoo Finance, Yahoo Taiwan, NHL game, and internal events
- Prototype end-to-end 4K HEVC next generation live streaming solution with extreme low latency
- Benchmark streaming capacities and tune FFmpeg recipes

Shanghai Jiao Tong University — Shanghai, China
Teaching Assistant of Introduction to Cryptography — May 2015 - Aug 2015

- Held office hour per week; graded assignments and exams

Yahoo! Inc. — Sunnyvale, CA
Internal Technical I, Video Platform API Team — Jun 2014 - Aug 2014

- Built a video streaming API testing tool to replay large number of HTTP requests
- Fixed bugs that were reported by the testing tool, decreased error rate in less 10%

Shanghai Jiao Tong University — Shanghai, China
Teaching Assistant of Introduction to Programming — May 2013 - Aug 2013

- Held office hour (3 hours per week), graded homework and exams
- Led, initiated discussions to a class of 200+ student by slides every week (13 weeks)

Projects

PAC-MAN AI Competition — Stanford, CA
Course Project, 1st prize — Nov 2016

- Ranked at 1st out of 600 students in the class, presented and shared innovative ideas to the class
- Brainstormed features, optimized reward functions, tuned relative scores to handle various scenarios

· Features includes patterns of left foods (gathered is preferable to fragmented); distance to the foods, the closest scared ghost and the closest capsule; number of foods and capsules left

Chinese Character Handwriting Generation in TensorFlow Stanford, CA
Course Project, Team lead Dec 2016

· Utilized TensorFlow to achieve a Recurrent Neural Network (RNN) generative model to simulate human Chinese character handwriting
· Applied Long Short Term Memory (LSTM) cell, modified Gated Recurrent Unit (GRU) cell, such that the stroke prediction will condition on the character class information, instead of randomly predicting
· Trained the model that was converged on a limited training set with a simple loss function
· Took lead on the project proposal, literature review and final report

Compiler Optimization for JoeQ Stanford, CA
Course Project Feb 2016

· Implemented a dataflow analysis framework on JoeQ system as well as Reaching Definitions and Faint Variable analysis
· Designed and implemented an optimization algorithm to remove redundant Null checks by applying Constant Propagation, Copy Propagation and Partial Redundancy Elimination
· Implemented the Loop-invariant Code Motion algorithm

Android App Volumaster Ann Arbor, MI
Senior Design Course, Team lead Jan 2015 - Apr 2015

· An Android app which will lower the phone ring automatically when a user is in meeting, cinema, etc
· Used Google Calendar API to automatically import potential events from users' calendar
· Could detect user locations (i.e. in cinema) by GPS or WI-FI connection, and adjust the phone ring volume accordingly
· Designed and implemented database schema, user login, multi-page flatten UI
· Published on Google Play (https://play.google.com/store/apps/details?id=com.rey.material.volumaster&hl=en)

Discipline Prediction from Class Review Ann Arbor, MI
Course Project Apr 2015

· Utilized a python crawler to crawl huge amount of training and testing data from *Rate My Professor* website
· Applied Support Vector Machine, Decision Tree, Naive Bayes, KNN, and other machine learning methods to predict disciplines of class from reviews

Honors

Scholarship at Shanghai Jiao Tong University Aug 2013
Dean's List at University of Michigan Dec 2013
University Honors at University of Michigan 2013 - 2014

Technical Skills

· Adept in computer programming: C/C++/Java/Python/JavaScript/MATLAB/Mathematica/LaTeX
· Object oriented programming, RESTful API design, Test-driven development, Distributed System Design
· MySQL/MongoDB, Github, Splunk, Guice, Celery, Django
· Video transcoding, FFmpeg/FFprobe, H264, HLS packaging, Elemental
· Languages: Verbally expert in English, mother-tongue in Mandarin