

YUHANG ZHAO

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PROFESSIONAL EXPERIENCE

Verizon Labs, Burlington, MA

02/2015- present

Principle Member of Technical Staff (02/2015 – 01/2016)

Team Lead (01/2016 – 08/2017)

Manager Software Development (08/2017 – present)

Design, develop, deploy, and support micro-service based frontend networking function external networks access on Mesos-CoreOS-Docker cluster. Major software components include proxies, ipam, orchestration, and networking enablers based on iproute2 utility. The solution has been deployed in multiple production data centers that host mobile apps such as VZCloud (25 million live customers as of the end of last year).

Lead effort to standardize frontend log format and frontend security hardening.

Three US patents pending.

Akamai Technologies Inc., Cambridge, MA

5/2013 – 2/2015

Senior System Software Engineer

Develop and port Akamai cache engine and de-dup engine to VM (kvm) and hardware platform (Cisco Waas)

Develop web analytic and visualization tool to analyze transaction log and syslog from distributed sources for business decision and troubleshooting purpose.

Develop distributed web-spider framework for deep crawling and performance probing.

Motorola Inc., Connected Home Division, Lowell, MA

8/2006 – 5/2013

Principal Staff Engineer

System integration lead for Dream Galaxy (trial with Verizon), Media Streamer (Deployed at Comcast), Switched Digital Video (deployed at Cox) and various VOD solutions (deployed at Verizon and Comcast). Provide technical guidance on inter-system interface. Create TMS TV Guide data ingestion framework. Lead a group of engineers, contractors and intern to develop UI automation tools based Instrument (for iPhone and iPad) and Robotium (for Android)

Motorola Inc., Network Business Division

1/2004 – 8/2006

Senior Systems Engineer

Establish and manage third party relationships with major handset vendors for IMS and OMA PoC client software. Acting product manager for MPTT client and VoxMoto client (CND in-house IMS client).

Ericsson Inc., Wireless Communications Division

3/2001 – 1/2004

Systems Engineer

Co-author of Ericsson CDMA2000 Mobile Packet Backbone (M-PBN) Design Guideline
Designer of Ericsson CDMA2000 IP Multimedia Subsystem testing network.

Tianjin High Definition Technologies Co, Ltd., Tianjin, China

1996 – 1999

Design Engineer, concurrent with educational pursuits

On the team that created the first prototype HDTV receiver in China. Successfully designed and implemented de-multiplexer and video buffer of HDTV decoder using TI TMS320C80.

EDUCATION

Master of Information and Data Science, 2018 (expected)

UC Berkeley, Berkeley, CA

Master of Science in Electrical Engineering, 2001

Louisiana State University, Baton Rouge, Louisiana

GPA: 4.0 / 4.0

Research project: Qos-aware media access protocol for mobile ad hoc network.

Master of Engineering in Signal Processing, 1999

Tianjin University, Tianjin, China

Research project: Implementation of H.263 video codec using TMS320C80

Bachelor of Engineering in Radio Technology, 1996

Certification

CCNP

PMP

Summary of Projects

Cloud Frontend Networking (Verizon)

Created a frontend host environment based on micro-service architecture.

Collectively the micro-services create and configure external IP interfaces for proxy containers, monitor and manage the life cycle of the proxy containers, advertise and reclaim routes, configure dynamic iptable and tc rules.

Created orchestration engine that intercepts Marathon deployment request, modify and re-compose new requests that automatically enable frontend networking as well as enforcing administrative policies.

Created tcp proxy, udp proxy, http-proxy that satisfy specific requirements of the VZ cluster.

The above project is mostly written in Golang from scratch.

Selection of Term Projects as Part of Academic Pursue at UC Berkeley:

Facial Feature Detection with Convolutional Neural Network based on Theano, deployed in AWS as GPU instance.

Stock Price Prediction Engine (Live stream process) based on Apache Spark, Cassandra, and Cloudera Time Series Library, deployed in AWS

Collaborative Filtering and Recommendation system with Yelp public dataset, based on Apache Spark and deployed in IBM Softlayer cloud.

Synonym Detection Engine using Google 5gram dataset, based on mrjob MapReduce framework, and deployed on SAP Altiscale cluster.

Data visualization for Food Access dataset (USDA) using Tableau web hosting and D3.

Web Performance Analysis Based on Deep Crawling (Akamai)

Created web crawlers that has been deployed in geo-distributed locations, which are used to probe performance (file upload, download, and interactive traffic) of a major cloud service provider. The crawling is done with a standard A/B test setting (with vs. without Akamai), the data is analyzed and visualization created. Proposal and sales pitch was created based on the result.

The crawler and analysis engine is written in Python. Visualization and presentation was done in Ruby On Rail (A bad choice.)

TV Guide Server and Media Streamer (Motorola)

Ingestion and Transform TV Guide data (xml) to proprietary formats for IPTV, SDV, and legacy systems.

End to end integration (from video server to ipad and android devices) for media streaming. A modified version is deployed in Comcast.

Push to Talk (Motorola)

End to end integration from push to talk server (essentially a SIP gateway and a media transcoding gateway). Overseeing client software integration effort of third party handset vendors.

Router, GGSN, PDSN (Ericsson)

System engineering and solution architects for Ericsson's router (AXC and AXE) and wireless gateway products.