Xiaochuan(Shaun) Yi

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Education

Ph.D, Computer Science, University of Georgia, July 2005
Dissertation title: A CPNETS-based Design and Analysis Framework for Service Oriented Distributed Systems. Advisor: Krys Kochut
Bachelor, Electrical Engineering, Shanghai Jiao Tong University, June 1996
Thesis: Development of an infrared LED controlled camera system

Certifications

Udacity Machine Learning Nanodegree, Jun 2018
Coursera Machine Learning, 2016

Teaching Experiences

Teaching assistant at Department of Computer Science, University of Georgia, 2000 – 2003. Taught the following courses:

- CSCI 1301, Introduction to Computing and Programming
- CSCI 4050/6050, Software Engineering
- CSCI 4470/6470, Algorithms
- CSCI 4370/6370, Database Management

At AT&T Labs, I have designed a series of lectures on current topics in computer science. These lectures have been presented in team seminars, with live demos and hands on tutorials for team members.

- Scalable distributed data storage and processing with Apache Hadoop and map reduce, 2012
- Full stack web application development, 2013
- Fast in memory data processing and analysis with Apache Spark, 2015
- Computer system monitoring with Nagios, 2016
- Data science with Anaconda python, 2017
- Machine learning applications with H2O.AI, 2017
- High performance machine learning with GPU cluster, 2018

Industry Experiences

AT&T Labs, San Ramon, CA, 2009 - present
Principal Member of Technical Staff

- Leading research project to build AT&T network data system platform. The platform collects tens of TBs per day of data from AT&T nationwide mobility network to build large-scale data system infrastructure to support AT&T big data insights initiatives. The platform receives nationwide real time RAN (Radio access network) event log at an average bit rate of 20Gb/s, processes and publishes the stream with Kafka for downstream real time applications. I also led the development of a number of downstream applications, such as a tool that succeeds in detecting antenna misconfiguration, another tool that succeeds in calculating actual cell coverage.

- Building machine learning models to predict customer churn, reduce trouble ticket call and technician dispatches. These algorithms/models have helped improving ticket classification, recommending resolutions, and reducing unnecessary dispatches. This project has saved company tens of millions of expense dollars.

AT&T Labs, San Ramon, CA, Jun 2005 - 2009
Senior Member of Technical Staff

- Developed IPTV metro network planning software tool in a 3 people development team [Patent #1]. Responsible for backend design and analysis. The tool has helped company save capital expense building metropolitan area of the IP network while ensured fault tolerant networking for service delivery. It has not only automated verification of fiber path diversity, but also shortened the network planning time for a metropolitan from 2 weeks of manual planning to several hours of programed search time.
- Build machine-learning algorithms to identify/locate network faults. Filed many US patents in the field to network troubleshooting. One of such examples (DELT/SELT) is to use per frequency tone data, using FFT and curve fitting to locate faults on twisted copper pair. This algorithm achieves 99.9% of fault detection rate with 0.01% false positive. This algorithm beats all other algorithms developed by companies such as ALU and Ericsson. It saved AT&T many hundreds of millions of dollars for unnecessary dispatches over last 10 years. It also saved $30 million because AT&T didn't have to buy the software from ALU.

Beijing Jiarong Technologies Inc., Beijing, China, July 1996 – Sept 1998
Software engineer

- Developed an international fax system that could lowered international fax cost for business customers. The system was built with DBMS, UNIX, private IP network, C programming.

Patents

1. Communications link discontinuity detection systems and methods, US Patent 9548793, issued January 17, 2017.
2. System and method for providing topology and reliability constrained low-cost routing in a network, US Patent 7768935, issued Aug 3, 2010

Publications

1. JCPNet tool and automated analysis of distributed systems. The 43rd ACM Southeast Conference, Atlanta, GA, March 2005
2. A CP-nets-based design and verification framework for web services composition. In Proceedings of 2004 IEEE International Conference on Web Services, pp. 756-760. July 2004, San Diego, California

Awards

Multiple Patent awards at AT&T Labs
Key contributor award AT&T Labs
Scholarships in Shanghai Jiao Tong University
2nd place in state High School Physics Olympiad