Zhiyuan Jim Li

An innovative Software Engineer with working & research experiences on performance optimization, distributed system, machine learning algorithms .

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zhiyuan8

Education

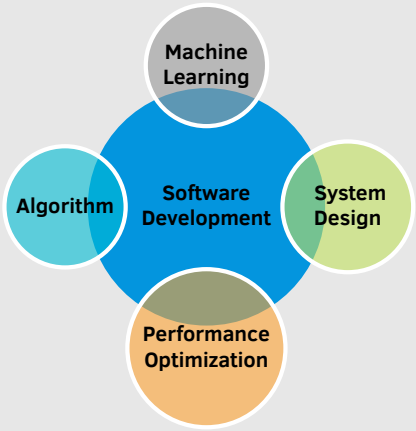
Master in Operation Research ,MS&E Department, **Stanford University**
2017 - 2019, GPA **4.0/4.0**
Coursework on CS:
- Deep Learning • Algorithms
- Data Structure • Optimization

Coursework on Math:
- Statistical Inference • Numeric Method
- Stochastic Modeling • Risk Analysis

Bachelor in Engineering , CEE Department, Tongji University
2013 - 2017, GPA **92.34/100**

Technical Skills

Overview



Programming / Cloud Services

Python • C++ • R • Linux scripts

AWS • Azure • Git • JavaScript • SQL

Spark • Java • Hadoop • MapReduce

Machine Learning

- tensorflow • Keras • PyTorch • sklearn
- networkx • pandas • nltk • Gensim

Working Experience

Aug 2019 - present — **Full-time Software Engineer** — Cadence Design Systems

in **Topology Research & Development team**, I work on:

- ***Balanced Graph Partition***: optimized **parallel** job scheduling.
  - Coded graph partition algorithms in C++ & Python to improve **distributed processing**, received **Creator Award**.
  - For customer electronic designs, peak imbalance **-70%**, runtime reduced from **20 hrs** to **11 hrs**.
- ***Python Runtime Optimization***: Captured expensive Python functions by cProfile & line_profiler, and optimized runtime by **Cython** tool and **BOOST** library.
- ***Lookup Table***: Parsed nested if-else statements and mathematical logics into tree structure.
  - My Python tool **automated** text file parsing process and passed **all** rule files from customers.
- ***Datastream Enhancement***: extended 32bit functionalities to 64bit and to detect int overflow errors.

Sep 2019 - Dec 2019 — **Graduate Teaching Assistant** — Stanford CS Department

CS229T is a graduate-level **theoretical machine learning** class

June 2018 - Feb 2019 — **Software Developer for Statistical Testing** — Stanford Statistics Department

with Prof. Chiara Sabatti

- Reduced runtime of a new multiple testing method from 3 min in Python to **15 sec in C++** by **BOOST** library.
- Programmed statistical testing methods in **C++** and **R**, discussed time complexity and type I/II error control.

Research Experience

Jan 2020 - present — **Analyzing Framing Strategy from Tweet Texts** — Stanford MS&E Department

with Prof. Chunk Eesley

- Applied **TF-IDF**, **word2vec**, GloVe to transfer text into vectors.
- Applied **LSTM**, **CNN**, **RCNN**, SVM, random forests algorithms in predicting text labels, implemented **Bayesian Optimization** for hyperparameter tuning, best F1 score achieved 84%.
- Designed a **Difference-in-Difference** model for event effect, found that severe environment leads to more emphasis on collaboration.

Oct 2018 - Jan 2019 — **Speech and Abusive Speech Detection** — Stanford MS&E Deparment

with Prof. Ashish Goel

- Extracted 35 signal features, such as Volume and **MFCC** by Discrete Fourier Transform and Discrete Cosine Transform.
- Compared SVM, Random Forests and other models, speech/noise detector achieves **92%** cross-validation accuracy with 0.02s delay.

Software Patents

Zhiyuan Li, Haitao Yu. "Nano-structure Auto-design Tool by Generic Algorithms". Software Copyright Number: 2016SR134349.
Zhiguo Yan, **Zhiyuan Li**. "Evaluation System for Quality of Road Tunnel Lining". Software Copyright Number: 2016SR121826.
Zhiguo Yan, **Zhiyuan Li**, Li Zhao. "Single Channel Air Supply Type Longitudinal Ventilation Method". Software Copyright Number: 2016SR133527.

Honors

2020 Creator Award, 'Kudos on Connect Partition', by Cadence Design Systems
2018 Jacobs Engineering Transportation Scholarship
2018 American Galvanizers Association Scholarship
2017 Engineering Graduate with distinction (1/565)
2016 National Scholarship and University Representative (1/3000)