Zhucheng (Michael) Tu

tuzhucheng.com · github.com/tuzhucheng · z3tu@uwaterloo.ca · 650.960.6477

SKILLS

PROGRAMMING

Python • C/C++ • Java
JavaScript • SQL • Scala

LIBRARIES/SYSTEMS/TOOLS

ML/Deep Learning:
PyTorch • NumPy
Pandas • scikit-learn

Data:
Hadoop • Hive • Spark
Presto • ElasticSearch

Databases:
PostgreSQL • MySQL
Redis • MongoDB

Web and Mobile:
Flask • Pyramid • Node.js
AngularJS • React • Android

Others:
Git • Vim • AWS • Azure
Docker • Thrift • Protobuf

EDUCATION

UNIVERSITY OF WATERLOO

MMath Thesis
Areas: Information Retrieval/NLP
Advisor: Prof. Jimmy Lin
May 2017 - Apr 2018 | Waterloo, ON

Bachelor of Software Engineering, Graduated on Dean's Honour's List
Sept 2012 - Apr 2017 | Waterloo, ON

ACTIVITIES

- Teaching assistant for Big Data Infrastructure and Artificial Intelligence
- *Real Data* HackerRank competition - ranked 22nd/456 (Apr 2016)
- *The Analytics Edge* Kaggle competition - ranked in top 21% (Aug 2015)
- Math Orientation Leader (Sep 2015)
- MathSoc and Class Representative for Software Engineering (2013)

WORK EXPERIENCE

UBER | Software Engineering Intern, Security/Risk

August – December 2016 | San Francisco, CA

- Engineered features for machine learning models to combat promotion fraud
- Performed detailed analysis of impact of features on reducing monetary loss
- Implemented and tuned text classification model for classifying spammy names

FACEBOOK | Data Engineering Intern, Business Intelligence

January - April 2016 | Menlo Park, CA

- Built pipelines and visualizations using Hive and React for Instagram Insights
- Compared approaches for ranking Instagram posts given an audience

REFLEKTION | Software Engineering Intern, Machine Learning Team

April - August 2015 | San Mateo, CA

- Improved similar and trendy product ranking for recommender system
- Led implementation and helped design data normalization module in Python

REFLEKTION | Software Engineering Intern, Analytics Team

August - December 2014 | San Mateo, CA

- Implemented an experiment framework, integrated with Kafka/Storm pipeline
- Prototyped a monitoring and alerting system using StatsD, Graphite, and Cabot
- Reduced ElasticSearch-based API query latency by up to 5x

RESEARCH EXPERIENCE

UNIVERSITY OF WATERLOO | Master's Student, Data Systems Group

May 2017 – April 2018 | Waterloo, ON

- Performed experimental analysis of Multi-Perspective Convolutional Neural Networks for detecting textual similarity, devised slim model that has 8x fewer parameters and improved effectiveness as a part of Master's thesis

PUBLICATIONS

[1] **Z. Tu**, "An Experimental Analysis of Multi-Perspective Convolutional Neural Networks," Master's thesis, 2018.

[2] **Z. Tu**, M. Li, and J. Lin, "Pay-Per-Request Deployment of Neural Network Models Using Serverless Architectures," in *Proceedings of the 2018 Conference of the North American Chapter of the Association for Computational Linguistics: Demonstrations*, 2018.

[3] Y. Liang, **Z. Tu**, L. Huang, and J. Lin, "CNNs for NLP in the Browser: Client-Side Deployment and Visualization Opportunities," in *Proceedings of the 2018 Conference of the North American Chapter of the Association for Computational Linguistics: Demonstrations*, 2018.

[4] R. Tang, W. Wang, **Z. Tu**, and J. Lin, "An Experimental Analysis of the Power Consumption of Convolutional Neural Networks for Keyword Spotting," *Proceedings of the 2018 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2018)*, 2017.

[5] **Z. Tu**, M. Crane, R. Sequiera, J. Zhang, and J. Lin, "An Exploration of Approaches to Integrating Neural Reranking Models in Multi-Stage Ranking Architectures," in *Proceedings of the SIGIR 2017 Workshop on Neural Information Retrieval (Neu-IR'17)*, 2017.

[6] R. Sequiera, G. Baruah, **Z. Tu**, S. Mohammed, J. Rao, H. Zhang, and J. Lin, "Exploring the Effectiveness of Convolutional Neural Networks for Answer Selection in End-to-End Question Answering," in *Proceedings of the SIGIR 2017 Workshop on Neural Information Retrieval (Neu-IR'17)*, 2017.

AWARDS

2017 Nominated for Jessie W.H. Zou Memorial Award for Undergraduate Research
2017 University of Waterloo Graduate Scholarship
2017 University of Waterloo Math Domestic Graduate Student Award