

# Zhucheng (Michael) Tu

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## 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