Ziyu Xu (Neil)

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Education

2021–?	**PhD Statistics** *Carnegie Mellon University*. Pittsburgh, PA	
2019–2020	**MS Machine Learning**	GPA: 4.0/4.3
	Advised by Aaditya Ramdas, David P. Woodruff, Justin Khim and Pradeep Ravikumar on various projects.	
2015–2019	**BS Computer Science**	GPA: 3.88/4.0

Preprints

1. Multiclass Classification via Class-Weighted Nearest Neighbors
   J. Khim, **Z. Xu**, and S. Singh

Publications

2. Dynamic Algorithms for Online Multiple Testing
   Z. Xu and A. Ramdas <u>MSML 2021</u>

3. Class-Weighted Classification: Trade-offs and Robust Approaches
   Z. Xu, C. Dan, J. Khim, and P. Ravikumar <u>ICML 2020</u>

4. Strategy and Policy Learning for Non-Task-Oriented Conversational Systems
   Z. Yu, **Z. Xu**, A. W. Black, and A. Rudnicky <u>SIGDIAL 2016</u>

5. Chatbot Evaluation and Database Expansion via Crowdsourcing
   Z. Yu, **Z. Xu**, A. W. Black, and A. Rudnicky <u>RE-WOCHAT workshop of LREC 2016</u>

Projects

June 2020-Present	**Multiple Testing**, *Carnegie Mellon University*. I am developing methods with guaranteed false discovery control in the online multiple testing setting and the bandit setting [2]. I am advised by Prof. Aaditya Ramdas.
Jan. 2020-Present	**Memory Bounded Experts**, *Carnegie Mellon University*. I proved theoretical bounds on space complexity in the streaming setting for the experts problem. I was advised by Prof. David P. Woodruff. Our work is under review.
Jan. 2019-Sep. 2020	**Robust Classification**, *Carnegie Mellon University*. I worked on theoretical understanding of weighted classification methods, and developing an algorithms robust to changes in class weighting. I was advised by Dr. Justin Khim and Prof. Pradeep Ravikumar in this area. Our work was accepted for publication at ICML 2020 [3].
Jan. 2018 - Aug. 2019	**Machine Translation**, *Carnegie Mellon University*. I used **PyTorch** to train a neural constituency parser as a data augmentation technique for neural machine translation models. I also used **DyNet** to train neural seq2seq models for translating obfuscated code into human-readable code. I was advised by Prof. Graham Neubig.
Jan. 2016-Oct. 2016	**Dialog Agents**, *Carnegie Mellon University*. I researched crowdsourcing strategies for gathering dialog data using Amazon Turk. I also contributed to building a dialog agent that was the first to use reinforcement learning in a non-task specific setting. I was advised by Prof. Zhou Yu and our work was published at SIGDIAL 2016 [4] and the RE-WOCHAT workshop at LREC 2016 [5].

Industry

May-Aug. 2018	**Science Intern**, *CTRL-labs (now part of Facebook Reality Labs)*, New York. I developed state-of-the-art LSTM ensemble model that models hand movement from electromyography (EMG) signals in **TensorFlow**. Built parser for constructing acyclic graph pipeline for preprocessing real time EMG signals.

May-Aug. **Software Engineering Intern**, *Bloomberg*, New York.
2017 I worked on the Message Infrastructure team, where I imported RapidCheck, a Haskell QuickCheck inspired testing framework, into the Bloomberg **C++** environment.

May-Aug. **Software Engineering Intern**, *PicMonkey*, Seattle.
2016 I helped build the user interface and photo editing features for the launch of the mobile photo editor app in both **Android** and **iOS**.

Teaching

2016–2018 **Teaching Assistant**, *Carnegie Mellon University*.
- 15-251: Great Theoretical Ideas in Computer Science (Fall 2017, Spring 2018, Fall 2018)
- 15-150: Introduction to Functional Programming (Fall 2016, Spring 2017).

Service

2020 SCS Master's Advisory Committee   *Advises the Dean of the School of Computer Science on issues relating to the master's student body.*

2020 MLD Master's Admissions Committee