YangJunqing Qiao
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United States

YangJunqing Qiao

CS Grad Student

About Me I am a multidisciplinary **mathematics and computer science student** with an interest in understanding, building, scaling, and advancing **systems for data driven solutions**. My main areas of focus are **machine learning and artificial intelligence** with a skill set biased towards designing, deploying, and upgrading **advanced statistical models**.

Education

University of Massachusetts, Amherst
MS in Computer Science *(September 2018 - February 2020)*
BS in Computer Science *(September 2014 - June 2018)*
BS in Mathematics *(September 2014 - June 2018)*

Experience

June 2019 - August 2019, *Software Engineer Intern*, Raytheon
Detailed achievements:

- **Decreased latency of operator commands** by parallelizing the main status polling thread of radar operating software *(C++)*
- **Streamlined software testing process** by developing a hardware emulator to simulate operator commands. *(Python)*
- **Increased the validity of standard testing procedure** by helping to identify and resolve long standing segfault bug. *(C++)*

June 2017 - August 2017, *Junior Investigator*, REU UMass Amherst (funded by NSF)
Detailed achievements:

- Authored a survey paper detailing the **insights circuit and complexity theory have on the power and behavior of neural networks**
- Showed why **neural networks are hard to analyze** and understand on a theoretical level by compiling several theorems reducing them to **unsolved problems in circuit theory**.

Projects

2019, *Detecting Latent Heuristics in BERT*, Reproducibility Paper
Tested **BERT** on two traditionally difficult NLP tasks to **probe** its **reliance on latent statistical heuristics and biases** in the datasets. *(Python, Pytorch, Google Colab)*

2018, *Gaussian Normalization*, Neural Networks Final Project
Building on the idea of batch and copula normalization, I investigated and drew conclusions about the effectiveness of **normalizing arbitrary layers of a neural network with a Gaussian distribution**. *(Python, Pytorch, Google Colab)*

Skills

Programming

- Java
- C++
- Shell
- SQL
- Python
- HTML/CSS

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Interests

Professional

Data analysis, software design, economics, optimization, security, fairness,

Personal

Violin, swimming, cooking, fitness