Qingqing Cao

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EDUCATION

Stony Brook University — Aug. 2015 - Sept. 2021
Ph.D. in Computer Science

Wuhan University — Sept. 2011 - June 2015
B.Eng. in Computer Science & Tech

HIGHLIGHTS

I have 5+ years of research experience in **natural language processing**, **mobile computing**, and **machine learning systems**. I have focused on building efficient and practical NLP systems for both edge devices and the cloud, such as on-device question answering (MobiSys 2019), faster Transformer models (ACL 2020), and accurate energy estimation of NLP models (ACL 2021).

EXPERIENCE

Postdoctoral Scholar @ University of Washington, US — Oct. 2021 - Present
Mentor: Prof. Hannaneh Hajishirzi

Research Assistant @ Stony Brook University, US — Jun. 2016 - Sept. 2021
Advisors: Prof. Aruna Balasubramanian & Prof. Niranjan Balasubramanian

Research Intern @ Microsoft Research Redmond, US — Jun. 2018 - Aug. 2018
Mentor: Oriana Riva Topic: dynamic business web queries

Research Intern @ Bell Labs Cambridge, UK — Jul. 2017 - Sept. 2017
Mentor: Nicholas Lane Topic: mobile deep learning accelerators

PUBLICATIONS

1. [**ACL 2021**] **Qingqing Cao**, Yash Lal, Harsh Trivedi, Aruna Balasubramanian, Niranjan Balasubramanian, "IrEne: Interpretable Energy Prediction for Transformers". Paper: `https://awk.ai/p/irene.pdf`
2. [**ACL 2020**] **Qingqing Cao**, Harsh Trivedi, Aruna Balasubramanian, Niranjan Balasubramanian, "DeFormer: Decomposing Pre-trained Transformers for Faster Question Answering". Paper: `https://awk.ai/p/deformer.pdf`
3. [**MobiSys 2019**] **Qingqing Cao**, Niranjan Balasubramanian, Aruna Balasubramanian, "DeQA: On-device Question Answering". Paper: `https://awk.ai/p/deqa.pdf`
4. [**MobiCom 2017**] Jian Xu (co-primary), **Qingqing Cao (co-primary)**, Aditya Prakash, Aruna Balasubramanian, and Don Porter. "UIWear: Easily Adapting User Interfaces for Wearable Devices". Paper: `https://awk.ai/p/uiwear.pdf`
5. [**EMDL** workshop@MobiSys 2021] **Qingqing Cao**, Alexandru Eugen Irimiea, Mohamed Abdelfattah, Aruna Balasubramanian and Nicholas D. Lane, "Are Mobile DNN Accelerators Accelerating DNNs?" Paper: `https://awk.ai/p/ncs.pdf`

6. [**EMNLP 2021** Demo] Yash Kumar Lal, Reetu Singh, Harsh Trivedi, **Qingqing Cao**, Aruna Balasubramanian, Niranjan Balasubramanian, "IrEne-viz: Visualizing Energy Consumption of Transformer Models". Paper: `https://awk.ai/p/irene-viz.pdf`
7. [**SustaiNLP** workshop@EMNLP 2020] **Qingqing Cao**, Aruna Balasubramanian, Niranjan Balasubramanian, "Towards Accurate and Reliable Energy Measurement of NLP Models". Paper: `https://awk.ai/p/sustainlp.pdf`
8. [**EMDL** workshop@MobiSys 2017] **Qingqing Cao**, Niranjan Balasubramanian, Aruna Balasubramanian, "MobiRNN: Efficient Recurrent Neural Network Execution on Mobile GPU" Paper: `https://awk.ai/p/mobirnn.pdf`
9. [**MobiCom 2017** demo] Jian Xu (co-primary), **Qingqing Cao (co-primary)**, Aditya Prakash, Aruna Balasubramanian, and Don Porter. "UIWear: Easily Adapting User Interfaces for Wearable Devices". Demo video: `https://youtu.be/YEQ3HNeQnts`

AWARDS

Catacosinos Fellowship (**2** out of 232 PhD students), Stony Brook University	2021
CDAC Rising Stars in Data Science, University of Chicago	2021
MobiSys Student Travel Grant, ACM SIGMOBILE	2017
Special CS Department Chair Fellowship, Stony Brook University	2015
Meritorious Winner in the Mathematical Contest in Modeling, COMAP	2014
National Scholarship (top **0.2%**), China Ministry of Education	2013
National Endeavor Fellowship (top **3%**), China Ministry of Education	2012, 2014

SERVICE

Program Committee: ACL Rolling Review, EMNLP 2021, ACL 2021, NAACL 2021, Eurosys 2021 (shadow), ACL 2020 (demo), MobiSys 2018 (PhD forum), IEEE Transactions on Mobile Computing (reviewer).

Editorial Board: Student member for the Journal of Systems Research

Volunteering Service: Student volunteer for MobiSys 2017 and ACL 2020, mentor for Stony Brook CS Grad Buddies Program.

Teaching: Instructor for Women in Science & Engineering (WISE) 380.

SKILLS

Programming: Python, C, Java.

Machine Learning: PyTorch, TensorFlow, Scikit-learn, Numpy, XGBoost.

COURSES

Computer Systems: Analysis of Algorithms (CSE548), Operating Systems (CSE506), Fundamentals of Computer Networks (CSE534).

Machine Learning: Machine Learning (CSE512), Artificial Intelligence (CSE537).