

# Qian Jiang

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## Education

<b>Ph.D. Candidate in Electrical and Computer Engineering</b> <i>University of Illinois at Urbana-Champaign (UIUC)</i> GPA:4.0/4.0 Advisor: Professor Minh N. Do	<b>2019- Present</b> Illinois, USA
<b>B.Sc. in Electrical Engineering</b> <i>University of Electronic Science and Technology of China (UESTC)</i> GPA:3.9/4.0	<b>2015 - 2019</b> Chengdu, China

## Research Interests

- Machine learning and computer vision, especially transfer learning and AutoML.

## Programming Skills

- Pytorch, Python, MATLAB, Bash, Vim, Git.

## Research Experience

<b>University of Illinois at Urbana-Champaign (UIUC)</b> <i>Hardware-aware Neural Architecture Search</i>	<b>Aug 2019 - Present</b> Illinois, USA
<ul style="list-style-type: none"><li>● Developed differentiable models predicting end-to-end hardware performance of neural network architectures.</li><li>● Incorporated hardware feedback into end-to-end Differentiable Neural Architecture Search (DNAS).</li><li>● Conducted experiments on CIFAR and ImageNet datasets on multiple hardware platforms (Edge GPUs, Edge TPUs, Mobile CPUs, and customized accelerators).</li><li>● Demonstrated hardware performance improvement of <math>1.4\times</math> on customized accelerators and <math>1.6\times</math> on existing hardware processors.</li></ul>	
<i>Multi-source transfer learning</i> <ul style="list-style-type: none"><li>● Formulated multi-source transfer learning as a bi-level optimization problem.</li><li>● Learned task weights for each source task during training using implicit differentiation.</li><li>● Conducted experiments on multiple tasks including classification and scene understanding.</li><li>● Demonstrated improved performance on CIFAR10, CelebA and Cityscapes datasets.</li></ul>	
<b>University of California, Los Angeles (UCLA)</b> <i>Semantic segmentation for medical images</i>	<b>08/2018 - 11/2018</b> Los Angeles, USA
<ul style="list-style-type: none"><li>● Developed tools to efficiently pre-process raw skull MRI images.</li><li>● Developed models to segment brain parts, especially hippocampus from raw skull images.</li></ul>	

## Work Experience

<b>International Business Machine Inc. (IBM)</b> <i>Research Intern, Optimization of communication libraries for IBM clouds</i>	<b>05/2020 - 08/2020</b> Yorktown Heights, USA
<ul style="list-style-type: none"><li>● Developed tools to efficiently benchmark and visualize communication performance.</li><li>● Optimized parameters for message passing interface on IBM clouds.</li></ul>	

## Teaching Experience

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### University of Illinois at Urbana-Champaign

*Teaching Assistant, Electrical and Computer Engineering Department*

- ECE310: Digital Signal Processing

**2021 Fall**  
*Illinois, USA*

## Other Experience

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### University of California, Los Angeles (UCLA)

*Full scholarship, Cross-disciplinary Scholar in Science and Technology (CSST)*

**2018 Summer**  
*Los Angeles, UCLA*

### Israel Institute of Technology (Technion)

*Full scholarship, Summer School of Engineering*

**2017 Summer**  
*Haifa, Israel*

## Relevant Coursework

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- ECE 544: Pattern Recognition
- ECE 549: Computer Vision
- ECE 490: Introduction to optimization
- ECE 534: Random Processes
- ECE 551: Digital Signal Processing II

## Publications

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### Conference papers

1. Qian Jiang, Raymond A. Yeh, and Minh N. Do. Multi-source transfer learning by learning to weight source tasks. Under submission, 2021.
2. Qian Jiang, Xiaofan Zhang, Deming Chen, Minh N Do, and Raymond A Yeh. EH-DNAS: End-to-end hardware-aware differentiable neural architecture search. Under submission, 2021. [\[Paper\]](#) [\[Code\]](#)

## Scholarships and Awards

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- C3SR (Illinois- IBM Center of Cognitive Computing Systems Research) Fellowship, 2019-2021.
- Outstanding Award, National College Student Research Innovation, 2018.
- National Scholarship, China, 2018.
- Tanglixin Scholarship, China, 2017.
- First Prize on Internet and Tech Innovation Competition, China, 2017.