

# Qian Lou

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## Education

### Indiana University Bloomington

PH.D. CANDIDATE IN COMPUTER ENGINEERING

Bloomington, IN

Aug. 2017 - Aug. 2021

### Shandong University

B.S. IN COMPUTER SCIENCE AND ENGINEERING

Jinan, China

Mar. 2013 - Aug. 2017

## Work Experience

### Research Assistant

Bloomington, Indiana

INDIANA UNIVERSITY

Aug. 2017 - Present

- Implemented fast and accurate deep neural networks on encrypted data. (4 first-author papers on NeurIPS)
- Proposed a kernel-wise neural network quantization method. (1 first-author paper on ICLR)
- Accelerated deep learning-based nanopore genome base-calling. (1 first-author PACT with best paper nominee)

### Research Intern

Mountain View, California

SAMSUNG RESEARCH AMERICA

May. 2020 - Aug. 2020

- Implemented a fast and accurate privacy-preserving neural network using Homomorphic Encryption and Multi-Party Computation techniques.

## Selected Publications

[C08] Qian Lou, Wen-je Lu, Cheng Hong, and Lei Jiang. "Faclon: Fast Spectral Inference on Encrypted Data", *Thirty-fourth Conference on Neural Information Processing Systems (NeurIPS 2020)*. Acceptance rate: 20.1%

[C07] Qian Lou, Song Bian, and Lei Jiang. "AutoPrivacy: Automated Layer-wise Parameter Selection for Secure Neural Network Inference", *Thirty-fourth Conference on Neural Information Processing Systems (NeurIPS 2020)*. Acceptance rate: 20.1%

[C06] Qian Lou, Bo Feng, Geoffrey C. Fox, and Lei Jiang. "Glyph: Fast and Accurately Training Deep Neural Networks on Encrypted Data", *Thirty-fourth Conference on Neural Information Processing Systems (NeurIPS 2020)*. Acceptance rate: 20.1%

[C05] Qian Lou, Sarath Janga and Lei Jiang. "Helix: Algorithm/Architecture Co-design for Accelerating Nanopore Genome Base-calling", *29th International conference on Parallel Architectures and Compilation Techniques (PACT 2020, Best paper nomina.)*. Acceptance rate:  $\frac{4}{137}=2.9\%$

[C04] Qian Lou, Feng Guo, Kim Minje, Lantao Liu and Lei Jiang. "AutoQ: Automated Kernel-Wise Network Quantization", *International Conference on Learning Representations (ICLR 2020)*. Acceptance rate: 26.5%

[C03] Qian Lou, Wenyang Liu, Weichen Liu and Lei Jiang "MindReading: An Ultra Low-Power Nanophotonic Accelerator for EEG-based Intention Recognition", *IEEE/ACM Asia and South Pacific Design Automation Conference (ASP-DAC 2020)*. Acceptance rate: 32.6%

[C02] Qian Lou, Lei Jiang "SHE: A fast and accurate deep neural networks for encrypted data", *Thirty-third Conference on Neural Information Processing Systems (NeurIPS 2019)*. Acceptance rate: 21.6%

[C01] Qian Lou, Wujie Wen, and Lei Jiang "3DICT: A Reliable and QoS Capable Mobile Process-In-Memory Architecture for Lookup-based CNNs in 3D XPoint ReRAMs", *IEEE/ACM International Conference On Computer Aided Design (ICCAD 2018)*. Acceptance rate: 24.7%

## Honors & Awards

2020	<b>Best paper nomination</b> , 29th International conference on Parallel Architectures and Compilation Techniques (PACT 2020)	Virtual
2020	<b>DAC young fellowship</b> , 57th Design Automation Conference (DAC 2020)	Virtual
2019	<b>Travel award</b> , Thirty-third Conference on Neural Information Processing Systems (NeurIPS 2019)	Vancouver, Canada

## Committee Services

2020	<b>AAAI 2021 Program Committee</b> , 35th AAAI Conference on Artificial Intelligence (AAAI 2021)	Canada
2020	<b>NeurIPS 2020 Reviewer</b> , 34th Conference on Neural Information Processing Systems (NeurIPS 2020)	Canada
2020	<b>ICML 2020 Reviewer</b> , 37th International Conference on Machine Learning (ICML 2020)	Australia
2019	<b>JETC Reviewer</b> , ACM Journal on Emerging Technologies in Computing Systems (JETC 2019)	United States