

LEI GAO

213-255-8040 ◇ leig@usc.edu

EDUCATION

University of Southern California

Ph.D. in Electrical Engineering

Advisor: Dr. Murali Annavaram

August 2022 - Present

Los Angeles, California, USA

University of Southern California

M.S. in Electrical Engineering

January 2020 - May 2021

Los Angeles, California, USA

University of California, Santa Barbara

B.S. in Electrical Engineering

September 2019 - March 2019

Santa Barbara, California, USA

TECHNICAL SKILLS

Programming Languages

C/C++, Python, CUDA, Bash

Python Packages

PyTorch, TensorFlow, TFLite

Software & Tools

CMake, Docker, TensorRT

Hardware Description Languages

Verilog, SystemVerilog

RESEARCH INTERESTS

Resource-efficient Machine Learning Systems

Federated Learning

Large Language Model

WORK EXPERIENCE

FedML Inc

Applied Researcher Internship

May 2022 - July 2022

Los Angeles, California, USA

- Developed an Android on-device training engine consisting of MNN and PyTorch for FedML library.

OmniVision Technologies Inc

SoC Design Engineer

July 2021 - April 2022

Santa Clara, California, USA

- Participated in RTL design and verification of MIPI CSI-2 IP core for CMOS image sensor.

USC ISI Application Specific Intelligent Computing Lab

Research Assistant Internship

January 2021 - April 2021

Los Angeles, California, USA

- Simulated MTJ circuits in HSPICE and generated SRAM designs using Memory Compiler.

Chipltech Technologies Ltd

ML ASIC Software Engineer Internship

September 2019 - December 2019

Shenzhen, Guangzhou, China

- Evaluated and improved the performance of a systolic array based ML accelerator simulator.

PUBLICATIONS

- Tuo Zhang, **Lei Gao**, Sunwoo Lee, Mi Zhang, Chaoyang He, Salman Avestimehr “TimelyFL: Heterogeneity aware Asynchronous Federated Learning with Adaptive Partial Training” CVPR 2023 Federated Learning for CV workshop.
- Tuo Zhang, **Lei Gao**, Chaoyang He, Mi Zhang, Bhaskar Krishnamachari, Salman Avestimehr “Federated Learning for Internet of Things: Applications, Challenges, and Opportunities” IEEE Internet of Things Magazine.

- Tuo Zhang, Chaoyang He, Tianhao Ma, **Lei Gao**, Mark Ma, Salman Avestimehr “Federated Learning for Internet of Things: A Federated Learning Framework for On-device Anomaly Data Detection” ACM SenSys 2021 AIChallengeIoT Workshop.
- Feng Yun, Yunkun Lin, Lou Yunfei, **Lei Gao**, Vaibhav Gera, Boxuan Li, Vennela Chowdary Nekkanti, Aditya Rajendra Pharande, Kunal Sheth, Meghana Thommondru, Guizhong Ye, Sandeep Gupta “Fault-coverage Maximizing March Tests for Memory Testing” 2022 IEEE International Test Conference.

HONORS AND AWARDS

Ph.D. Annenberg Fellowship, USC	August 2022
College of Engineering Honors Program Graduation Scholar, UCSB	June 2019

TEACHING EXPERIENCE

EE 599: Machine Learning Systems <i>Teaching Assistant</i>	August 2023 - December 2023 <i>University of Southern California</i>
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PROFESSIONAL SERVICE

Reviewer: IEEE Computer Architecture Letters	September 2023
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PATENT

- Xiaoming Chuang, Yifan YangGong, Hanxun Zheng, **Lei Gao**, Juzhe Zhong “Data processing method, device, chip and computer readable storage medium” China Patent CN111814983A, October 23, 2020.