



Xiaolong Tu

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EDUCATION

- Ph.D. Student in Computer Science** Jan. 2023 – Jan. 2028 (expected)
Georgia State University
Advisor: Dr. Haoxin Wang, Assistant Professor, Department of Computer Science
- B.S. in Communication Engineering** Sep. 2008 – Jun. 2012
Hubei University

PROFESSIONAL EXPERIENCE

- Research Assistant,** *Atlanta, Georgia* Jan. 2023 – Present
- Set up a measurement platform using Monsoon Power Monitor to conduct energy measurement on multiple edge devices running state-of-art CNN models.
 - Generated thousands of variants with random configurations at kernel, model and application-level. Converted the variants into tf-lite models, then measured the energy consumption of these models during inference on edge devices.
 - Designed three datasets (DeepEn2023) that contain the energy consumption data of kernel, model and application-level tf-lite models. These datasets can be used as training data to predict the energy consumption of other models or evaluate the energy efficiency of edge devices. Trained a random forest model to predict other unseen model's energy consumption. The predictor achieved high accuracy.
 - Proposed a scoring system with two indicators for power and energy efficiency to evaluate the energy-efficient performance of edge devices.
- Cellular Interoperability System Engineer** *Apple China R&D, Beijing, China* Oct. 2021 – Dec. 2022
- Designed and verified the wireless system for Apple's new generation products, with a special focus on 3GPP protocols.
 - Set up an end-to-end wireless system verification lab, including the core network, transportation, basestation, massive MIMO radio unit, and user equipment.
 - Reported more than 30 CRs (Change Requests) for bug fixing. Handled approximately 20 commercial issues.
 - Submitted 3 patent applications related to the physical layer.
 - Provided joint field test support in Hangzhou with a Chinese carrier.
- Modem Integration Engineer** *Qualcomm China R&D, Shanghai, China* May. 2021 – Oct. 2021
- Co-designed and delivered the first LTE modem chipset for a Chinese vendor.
 - Set up a collaboration lab for multiple teams. Initialized more than 5 test platforms using keysight UXM and Anritsu equipment.

PUBLICATIONS

Papers Published or Accepted

- [C2] Unveiling Energy Efficiency in Deep Learning: Measurement, Prediction, and Scoring across Edge Devices
• [Xiaolong Tu](#), Anik Mallik, Dawei Chen, Kyungtae Han, Onur Altintas, Haoxin Wang, and Jiang Xie
• *ACM/IEEE Symposium on Edge Computing (SEC)*, Wilmington, DE, 2023
- [C1] Visualization of Mobility Digital Twin: Framework Design, Case Study, and Future Challenges
• Yueyang Liu, [Xiaolong Tu](#), Dawei Chen, Kyungtae Han, Onur Altintas, Haoxin Wang, and Jiang Xie
• *The 20th IEEE International Conference on Mobile Ad-Hoc and Smart Systems (MASS)*, 2023

PROFESSIONAL ACTIVITIES

As a Member

Student Member of Institute of Electrical and Electronics Engineers (IEEE)

Mar. 2023 – Present

As a Reviewer

Reviewer of IEEE Internet of Things Journal

Oct. 2023 – Present