

# Huancheng Chen

*PhD Candidate*

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## Education

- 2020–now **Ph.D. in Electrical and Computer Engineering**, *University of Texas at Austin*  
GPA: 3.97/4.0     Advisor: Haris Vikalo
- 2015–2019 **B.Eng. in Electrical Engineering**, *South China University of Technology (SCUT)*  
GPA: 3.90/4.0

## Research Interests

Federated Learning, Trustworthy AI, Distributed Optimization

## Publications

- [1] **Huancheng Chen**, Haris Vikalo. [Mixed-Precision Quantization for Federated Learning on Resource-Constrained Heterogeneous Devices](#). arXiv, 2023
- [2] **Huancheng Chen**, Haris Vikalo. [Accelerating Non-IID Federated Learning via Heterogeneity-Guided Client Sampling](#). arXiv, 2023
- [3] **Huancheng Chen**, Haris Vikalo. [Federated Learning in Non-IID Settings Aided by Differentially Private Synthetic Data](#). Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops **Oral**, 2023
- [4] **Huancheng Chen**, Johnny Wang, Haris Vikalo. [The Best of Both Worlds Accurate Global and Personalized Models through Federated Learning with Data-Free Hyper-Knowledge Distillation](#). The International Conference on Learning Representations (ICLR), 2023
- [5] Abdulllah Mohamed\*, **Huancheng Chen\***, Zhangyang Wang, Christian Claudel. [Skeleton-Graph: Long-Term 3D Motion Prediction From 2D Observations Using Deep Spatio-Temporal Graph CNNs](#). The International Conference on Computer Vision (ICCV), 2021

## Professional Experience

- May – Aug. 2022 **Research Intern**, *Toyota*, Mountain View, CA  
Mentor: Johnny Wang
- Investigated Knowledge Distillation technique in Federated Learning and proposed a data-free KD-based FL algorithm and submitted a paper to ICLR2023.

Jan. – May. **Research Intern, Nokia Bell Lab**, Murray Hill, NJ

2022 Mentor: Iraj Saniee

- Developed an end-to-end background removal of equipment's images framework based on **U-2-Net**.
- Constructed a highly accurate (90%+) and robust deep network for detecting flaws on images of communication devices.

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## Teaching Experience

EE351M **Digital Signal Processing**, *Teaching Assistant*, 2022 Fall

CS395T **Convex Optimization**, *Teaching Assistant*, 2022 Spring

EE380L **Data Mining**, *Teaching Assistant*, 2021 Fall

EE422C **Software Design and Implementation II (Java)**, *Teaching Assistant*, 2021 Summer

EE381K **Statistical Machine Learning**, *Teaching Assistant*, 2021 Spring

CS395T **Foundation of Predictive Machine Learning**, *Teaching Assistant*, 2020 Fall

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## Honors

Sept. 2015 **National Encouragement scholarship**, *South China University of Technology*

Sept. 2016 **The First Prize scholarship**, *South China University of Technology*

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## Skills

Languages English (fluent), Mandarin (native), Cantonese (native), Hakka (native)

Programming Python, Java, C/C++, Bash, SQL, Matlab,  $\LaTeX$

Tools Tensorflow, Pytorch, Git, Pandas