# Huancheng Chen

PhD Candidate

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# Education

- 2020–2025 **Ph.D. in Electrical and Computer Engineering**, *University of Texas at Austin* GPA: 3.97/4.0 Advisor: Haris Vikalo
- 2020–2023 **M.S. 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, Foundation Models, Continual Learning

#### Publications

- [1] **Huancheng Chen**, Haris Vikalo. Recovering Labels from Local Updates in Federated Learning. The International Conference on Machine Learning (ICML), 2024
- [2] Huancheng Chen, Haris Vikalo. Mixed-Precision Quantization for Federated Learning on Resource-Constrained Heterogeneous Devices. The IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR), 2024
- Huancheng Chen, Haris Vikalo. Accelerating Non-IID Federated Learning via Heterogeneity-Guided Client Sampling. arXiv, 2023
- [4] 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
- [5] 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
- [6] Abduallah 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** 

- Feb present. Research Intern, SonyAI, Austin, Texas
  - 2024 Mentor: Jingtao Li
    - Proposed a novel continual learning scheme based on low-rank adaptation (LoRA) that enables foundation models fine-tuning on a sequence of downstream tasks avoid of challenge of cataphoric forgetting.
  - May Aug. Research Intern, Toyota, Mountain View, CA
    - 2022 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.
      - $\odot$  Constructed a highly accurate (90%+) and robust deep network for detecting flaws on images of communication devices.

# 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, 2024 Spring
- CS395T Foundation of Predictive Machine Learning, Teaching Assistant, 2020 Fall

#### Honors

- Sept. 2015 National Encouragement scholarship, South China University of Technology
- Sept. 2016 The First Prize scholarship, South China University of Technology

### Skills

Languages English (fluent), Mandarin (native), Cantonese (native), Hakka (native) Programming Python, Java, C/C++, Bash, SQL, Matlab,  $\[MText{EX}]$ 

Tools Tensorflow, Pytorch, Git, Pandas