

SEOHYEON CHA PH.D.

EDUCATION	University of Texas at Austin <i>Ph.D. in Electrical and Computer Engineering</i> • Advisor: Prof. Haris Vikalo • Research area: Federated learning, Trustworthy AI, Generative models	Austin, TX 2024 - Present
	Korea Advanced Institute of Science and Technology (KAIST) <i>M.S. in Electrical Engineering</i> • Advisor: Prof. Joonhyuk Kang • GPA: 4.17/4.3	Daejeon, Korea 2022 - 2024
	<i>B.S. in Electrical Engineering</i> • Summa Cum Laude • GPA: 4.03/4.3 (Major GPA: 4.1/4.3)	2017 - 2022
PUBLICATIONS	<ol style="list-style-type: none">Honggu Kang, Seohyeon Cha, Jinwoo Shin, Jongmyeong Lee, and Joonhyuk Kang, “NeFL: Nested Federated Learning for Heterogeneous Clients,” <i>arXiv preprint arXiv:2308.07761</i>, 2023. (submitted)Seohyeon Cha, Honggu Kang, and Joonhyuk Kang, “On the Temperature of Bayesian Graph Neural Networks for Conformal Prediction,” In <i>NeurIPS 2023 Workshop: New Frontiers in Graph Learning</i>, 2023.Seohyeon Cha, Sanghyuk Kim, Jiwan Seo, and Joonhyuk Kang, “Intelligent Surface-aided Transmit-array Antenna in mmWave Communication System with Historical Channel Observation,” In <i>IEEE International Conference on Consumer Electronics-Asia (ICCE-Asia)</i>, 2022.	
RESEARCH EXPERIENCES	Generative Model-aided FL for Heterogeneous Clients • FL framework in which heterogeneous models utilize feature-generative models • Demonstrate compatibility of generative models in FL in terms of accuracy, model heterogeneity, and privacy	Sep 2023 - Present
	Model Scaling in FL for Heterogeneous Clients • Adaptive model scaling method in both width/depth dimensions for FL • Provide impact of pre-trained models and statistical heterogeneity within the proposed framework	Jan 2023 – Sep 2023
	Trustworthy Graph Learning via Conformal Prediction (CP) • Bayesian GNNs with temperature that enhances set predictor informativeness • Analyze the relationship between informativeness and model calibration	Jan 2023 – Sep 2023
PROJECTS	Surface Defect Detection of Airplane Using Object Detection • Implement object detection algorithm for surface defect detection using PyTorch	Jul 2023 - Jan 2024
	Spectrum Sensing and Signal Type Classification in 6GHz Band • Implement shared spectrum model in 6 GHz band using MATLAB • Devise signal classification and detection algorithm using PyTorch	Sep 2021 - Jan 2024
AWARDS AND HONORS	<ul style="list-style-type: none">National Science and Engineering Scholarship, Academic ExcellenceKorean Governmental Scholarship, KAIST GraduateKorean Governmental Scholarship, KAIST Undergraduate	2019 - 2021 2022 - 2024 2017 - 2018

TEACHING EXPERIENCES	Undergraduate Individual Study Assistant KAIST	
	<ul style="list-style-type: none"> • Help undergraduates understand ML theory and code implementation, Spring 2023 • Cover concepts of federated learning and its implementation, Fall 2023 	
	Teaching Assistant KAIST	
	<ul style="list-style-type: none"> • EE205 Data Structures and Algorithms for Electrical Engineering, Fall 2022 • EE966 M.S. Seminar <Colloquium>, Spring/Fall 2023 	
	Counseling Assistant KAIST	Sep 2022 - Feb 2023
	<ul style="list-style-type: none"> • Counsel 32 undergraduate/graduate students • Help them with coursework, career decisions, and relationships 	
	Tutor for freshman KAIST	2018 - 2019
	<ul style="list-style-type: none"> • MAS101 Calculus 1, MAS102 Calculus 2 • Taught calculus and problem-solving, met once a week during semester 	
SKILLS	Languages: English (Fluent), Korean (Native)	
	Programming: Python, C, C++, \LaTeX .	
	Softwares: PyTorch, TensorFlow, MATLAB, Linux, Git.	