

RESEARCH INTERESTS	Speech and Audio Processing, Speech-Language Modeling, and (Real-Time) Conversational AI	
EDUCATION	The University of Chicago , Chicago, IL, USA	Sep 2024 - Jun 2026
	M.S. in Data Science GPA: 3.95/4.0	
	Wuhan University , Wuhan, Hubei, China	Sep 2020 - Jun 2024
	B.S. in Applied Mathematics & B.A. in Finance GPA (WES): 3.82/4.0, Ranking: 4/74 (5%)	
	Wuhan University , Hongyi Honor College	Mar 2021 - Jun 2024
	Selective Interdisciplinary Honors Program	
RESEARCH EXPERIENCE	The University of Texas at Austin , Speech, Audio, and Language Technologies (SALT) Lab	
	Supervised by Prof. David Harwath	
	Visiting Student Researcher	Jul 2026 - Present, Austin, TX
	<ul style="list-style-type: none">Investigating instruction following in full-duplex conversational AI during gameplay.Developed Speaker Handles, enabling frozen text LLMs to reason about speaker identity across dialogue sessions through learned acoustic representations (see Preprint [1]).	
	Remote Research Collaborator	Oct 2025 - Jun 2026, Remote
	<ul style="list-style-type: none">Implemented and trained a unified semantic–acoustic speech encoder.Developed a benchmark for multi-party audio-language models using game-based conversations.	
	The University of Chicago , Independent Research	Jun 2025 - Feb 2026
	<ul style="list-style-type: none">Independently developed Silence-the-Mimic, an efficient defense against voice cloning using imperceptible perturbations (see Publication [2]).	
	Wuhan University , with Heng Xiong, Wenjun Jiang, and Rogemar Mamon	Sep 2022 - Mar 2024
	<ul style="list-style-type: none">Investigated spatiotemporal crop yield forecasting and risk modeling. Related work: Publication [3]; Presentations [1, 2].	
PREPRINTS	[1] Voices as Handles: Reasoning about Speaker Identity with Frozen Text LLMs	
	Runqiu Xu , Zhisheng Zheng, and David Harwath <i>Submitted to ICASSP 2027.</i> arXiv GitHub	
	<ul style="list-style-type: none">Developed Speaker Handles, soft-token speaker representations that let a frozen text LLM (Qwen3.5-9B) reason about who said what across dialogue sessions, training only an 8.5M-parameter projector (0.1% of the backbone) with a three-stage curriculum.Built SpeakerBind, a 6,000-question benchmark where answers require tracking who said what across turns, with counterfactual speaker swaps to test whether predictions truly depend on speaker identity.Speaker Handles come within 1.5% of text speaker labels on SpeakerBind (70.40% vs. 71.88%), far above the 24.21% of transcript-only, while reaching 97.40-98.36% accuracy on VoxCeleb1.	
PUBLICATIONS	[2] Silence-the-Mimic: Accelerating Imperceptible Perturbation Generation Against Voice Cloning	
	Runqiu Xu <i>[Sole Author]</i> <i>IEEE Spoken Language Technology (SLT)</i> , 2026. arXiv GitHub	
	<ul style="list-style-type: none">Introduced Silence-the-Mimic (STM), a white-box defense against voice cloning that operates in the STFT domain under a hard psychoacoustic masking constraint, removing tedious quality-loss tuning.Outperformed AntiFake-1000 and VoiceGuard on average protection rate (85.6% vs. 62.3%/82.1%), with better audio quality (MOS 3.39 vs. 3.26/2.90, PESQ 2.59 vs. 2.16/1.80, STOI 0.92 vs. 0.82/0.79).Reduced protection time to 2.19 s/utterance on average, 20.8× faster than AntiFake-1000 and 37×	

faster than VoiceGuard, while retaining 94.7% average rejection rate under four purification attacks.

[3] Regional Heterogeneity Modeling for Spatiotemporal Crop Yield Forecasting

Heng Xiong, **Runqiu Xu**, and Wenjun Jiang

Communications in Statistics – Theory and Methods, 2026.  [Paper](#)

- Developed Regional Heterogeneity Nonlinear Model (RHNLM), combining region-specific dynamic factor models with a shared neural network for heterogeneity-aware forecasting.
- Constructed a 35-year geospatial dataset across 1,532 grid cells using ArcGIS, integrating rice yield, meteorological, and soil data at resolutions ranging from 90 m to 0.5°.
- Reduced forecast RMSE by 64.7%, 56.4%, and 35.0% over linear model, neural nets and random forest.

PRESENTATIONS [1] Evaluation of Driving Behavior and Risk Rating with Machine Learning Techniques Based on Telematics Data

Runqiu Xu, Wenjun Jiang, Rogemar Mamon, Heng Xiong (presenter)

International Conference on Econometrics and Statistics (EcoSta 2023) [*Invited Talk*]

[2] An Improved Neural Network Approach for Agricultural Index Insurance Design

Runqiu Xu, Heng Xiong, Wenjun Jiang

26th International Congress on Insurance: Mathematics and Economics (IME 2023)

INDUSTRY
EXPERIENCE

China Securities

Sep 2023 - Feb 2024, Remote

Quantitative Researcher Intern

- Fine-tuned BERT to derive news sentiment factors for market trend prediction with 74% accuracy.

Nanjing Securities

Jun 2023 - Aug 2023, Beijing, China

Quantitative Researcher Intern

- Built financial fraud detection models using SVMs and ensemble methods, achieving 62.4% recall.

AWARDS &
HONORS

Honors Graduate, Wuhan University

2024

Wuhan University Scholarship (15%)

2021 - 2023

Merit Student of Hongyi Honor College (with scholarship, 10%)

2021 - 2023