

ANFENG XU

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EDUCATION

University of Southern California (USC) Ph.D. in Electrical Engineering, Minor in Computer Science	Expected Dec 2026 GPA: 4.0/4.0
University of Southern California (USC) M.S. in Electrical Engineering	May 2024 GPA: 4.0/4.0
University of California, San Diego (UCSD) B.S. in Electrical Engineering, Minor in Mathematics	June 2021 GPA: 3.97/4.0

RESEARCH INTERESTS

Speech and Audio Processing, Generative AI, Multi-modal Modeling, AI for Healthcare .

WORK EXPERIENCE

Signal Analysis and Interpretation Laboratory (SAIL) <i>Ph.D. Research Assistant, Advisor: Dr. Shrikanth Narayanan</i>	August 2021 - Present <i>USC</i>
Conduct research projects with the main focus on speech processing. Lead the child speech/video project, mentor MS students, and manage the IEMOCAP/CreativeIT data distribution.	
Meta Reality Lab <i>Ph.D. Research Scientist Intern, Advisor: Dr. Biqiao Zhang</i>	May 2024 - Aug 2024 <i>Meta</i>
Conducted research for Keyword Spotting (KWS) in the Meta Speech AI team. Paper under review for ICASSP 2025.	
Jacobs School of Engineering <i>Undergraduate Research Intern, Advisor: Dr. Tara Javidi</i>	January 2020 - December 2020 <i>UCSD</i>
Developed a new algorithm for a Quantitative Group Testing (QGT) problem.	
Engineers for Exploration <i>Undergraduate Research Intern, Advisor: Dr. Curt Schurgers</i>	January 2019 - September 2019 <i>UCSD</i>
Built an underwater depth sensor embedded system for Scripps Institute of Oceanography using C language.	

RECENT PROJECTS

Automated Child Speech/Video Assessment (USC - BU - Apple)	January 2022 - Present
Proposed annotation framework and modeling pipeline to predict language capabilities of children directly from audio. Developed an audio-visual child-adult speaker classification method. Built a child-adult speaker diarization model with Speech Foundation Models. Built simulated conversations from AudioSet to further enhance child-adult speaker diarization. Currently investigating to integrate LLM, ASR, and speaker diarization. First-authored 4 conference publications (2 Interspeech, 1 ICASSP, 1 under review).	
AI Conversational Interactions (USC - Disney Research)	June 2022 - Present
Helped investigating methods to estimate WER and CTC loss for simulated speech data. Collecting conversational dataset between a digital AI agent and multiple subjects.	
Longitudinal Aging Study in India Diagnostic Assessment of Dementia (USC - AIIMS)	Mar 2023 - Present
Developing methods for an automated multilingual language proficiency assessment pipeline for elderly people.	

PUBLICATIONS

T Feng, **A Xu**, et al. “Can Generic LLMs Help Analyze Child-Adult Interactions Involving Children with Autism in Clinical Observation?” (Under Review, NeurIPS 2024 GenAI for Health Workshop)

A Xu, T Feng, H Tager-Flusberg, C Lord, S Narayanan. “Data Efficient Child-Adult Speaker Diarization with Simulated Conversations” (Under review, ICASSP 2025).

A Xu, B Zhang, S Kong, Y Huang, Z Yang, S Srivastava, M Sun. “Effective Integration of KAN for Keyword Spotting” (Under review, ICASSP 2025).

T Feng, **A Xu**, X Shi, S Bishop[†], S Narayanan. “Egocentric Speaker Classification in Child-Adult Dyadic Interactions: From Experimental Design to Computational Modeling” (Under review, ICASSP 2025).

A Xu, K Huang, T Feng, L Shen, H Tager-Feng, S Narayanan. “Exploring Speech Foundation Models for Speaker Diarization in Child-Adult Dyadic Interactions” (Interspeech, 2024).

A Xu, K Huang, T Feng, H Tager-Feng, S Narayanan. “Audio-visual child-adult speaker classification in dyadic interactions” (ICASSP, 2024).

D Bose, R Hebber, T Feng, K Somandepalli, **A Xu**, S Narayanan. “MM-AU:Towards Multimodal understanding of advertisement videos” (ACM MM, 2023).

A Xu, R Hebbar, R Lahiri, T Feng, L Butler, L Shen, H Tager-Flusberg, and S Narayanan. “Understanding Spoken Language Development of Children with ASD Using Pre-trained Speech Embeddings” (Interspeech, 2023).

LANGUAGES

English (fluent), Japanese (native), Mandarin Chinese (conversational)

AWARDS

ECE Ph.D. Screening Exam (USC, 2022): Ranked 1st for the Signals and Systems track.

Annenberg Fellowship (USC, 2021): Top-off fellowship selected among incoming Ph.D. students.

Summa Cum Laude (UCSD, 2021): GPA top 0 ~ 2%.