Eray Eren

Los Angeles, CA, USA
📱 *+1 (424) 467 9492*
✉ *erayeren@g.ucla.edu*

— Education

2022– **Ph.D. Candidate, Electrical & Computer Engineering (in progress)**, *University of California, Los Angeles (UCLA)*, CA, USA
Advisor: Abeer Alwan (PI, Speech Processing Laboratory, UCLA)

2019-2021 **M.S. in Computer Science**, *Ozyegin University*, Istanbul, Turkey
Thesis: Deep Learning-Based Speaker-Adaptive Postfiltering with Limited Adaptation Data for Embedded Text-to-Speech Synthesis Systems
Advisor: Cenk Demiroglu (PI, Speech Processing Laboratory, Ozyegin University)

2011-2015 **B.S. in Electronics Engineering**, *Bogazici University*, Istanbul, Turkey
Thesis: Remote Cardio-respiratory Sensing and Monitoring Sensor System for Public Health
Advisor: Ahmet Öncü (Bogazici University)

— Positions Held

Research

09/2022– **Graduate Research Fellow**, *Speech Processing Laboratory, UCLA*, CA, USA
Supported by Amazon Graduate Fellowship (as Amazon 2024 Fellow) and Flawless AI Research Grant (06/2023–12/2025) for Ph.D. research and academic collaboration.
- Developed standalone zero-shot speech prosody models utilizing a Perceiver-IO architecture to map text and reference audio to latent prosodic features (pitch, duration, and energy).
- Achieved state-of-the-art prosody-prediction accuracy, improving the naturalness and cadence of downstream TTS systems.
- Proposed a lightweight (48M-parameter) zero-shot style-transfer TTS system featuring fine-grained style disentanglement; achieved a 3.64 prosody pMOS score, significantly outperforming competitive baselines.
- Implemented a hybrid DSP & DNN F0 estimation architecture that fuses noise-robust summary correlograms with waveform representations for robust pitch extraction.
- Contributed to neural audio codec research focused on acoustic/semantic performance; explored model-merging strategies using task vectors.

06/2023– 12/2025 **Research Scientist Intern & Academic Collaborator**, *Flawless AI Inc.*, CA, USA
Conducted style-preserving neural speech editing research during three consecutive summer internships (2023–2025) and ongoing academic collaboration. This work supported the development of zero-shot prosody and style-transfer models detailed above.

09/2019– 06/2022 **Graduate Research Fellow**, *Speech Processing Laboratory, Ozyegin University*, Istanbul, Turkey
Devised a few-shot speaker-adaptive neural postfilters (e.g., Transformers, GANs) for text-to-speech synthesis. Studied data- and parameter-efficient synthesis systems. Designed Bayesian neural networks for uncertainty assessment in speaker verification under spoofing attacks.

2018–2019 **R&D Engineer**, *Neoses Speech Technologies*, Istanbul, Turkey
Successfully modeled (including data collection and cleaning) a fast SPSS-based Turkish text-to-speech system using deep learning (funded by The Scientific and Technological Research Council of Turkey).

2016–2018 **R&D Engineer**, *Emb. Software Unit, Cent. Research, BEKO*, Istanbul, Turkey
Programmed microcontrollers in home appliances using C. Participated in the development of BEKO's own OS for its embedded products.

Summer 2014 **Research Intern**, *Radar/Electronics Unit, ASELSAN*, Ankara, Turkey
Surveyed several compressive-sampling algorithms for reconstructing sparse signals; implemented and evaluated them in MATLAB with a GUI.

Summer 2014	**Research Intern**, *Software Unit, Research and Dev., NETAS*, Istanbul, Turkey Worked on the Voice over IP security project. Surveyed possible attacks and tested them.
Summer 2013	**Research Intern**, *Man. Automation and Research Lab., Koc University*, Istanbul, Turkey Collaborated with Prof. Ismail Lazoglu. Studied the electronic circuit design of the "High-Performance Linear Compressor System" which is funded by BEKO.
Summer 2013	**Research Intern**, *Embedded Software Unit, Central Research, BEKO*, Istanbul, Turkey Developed and tested a Unix shell-scripting project to enable internet connectivity for home appliances.

Teaching

2023	**Graduate Teaching Assistant**, *UCLA*, CA, USA Assisted with grading for the Digital Signal Processing (DSP) course. Prepared and led two hours of discussion sections weekly.
2019–2021	**Graduate Teaching Assistant**, *Ozyegin Uni.*, Istanbul, Turkey Assisted with grading and course-material preparation, including theoretical homework assignments & Python-based applications for Machine Learning, Speech Processing, and DSP courses.

Awards and Honors

2023–2025	Flawless AI PhD Research Grant for Academic Collaboration – Funded PhD research on Generative AI Speech Modeling
2024	Amazon Graduate Fellowship – Electrical & Computer Engineering, UCLA & Amazon
2022	Awarded a first-year graduate fellowship – Electrical & Computer Engineering, UCLA
2021	Graduated with a GPA of 4.0/4.0 – Computer Science, Ozyegin University
2018	Distinguished Innovator Award – Arcelik Group

Selected Projects and Publications

Journal Publications

2026	**Eray Eren**, Q. Liu, H. Kim, P. Garrido, and A. Alwan, "Comprehensive Speech Prosody Modeling: A Task-Agnostic Approach". IEEE Signal Processing Letters. (2025). In Review.
2026	**Eray Eren**, Q. Liu, A. Alwan, and G. Bharaj, "Improving Zero-Shot Style Transfer Text-to-Speech by Disentangled Fine-Grained Style Modeling". Journal of the Acoustical Society of America. (2026). In Review.
2023	**Eren, Eray**, and C. Demiroglu. "Deep learning-based speaker-adaptive postfiltering with limited adaptation data for embedded text-to-speech synthesis systems". Computer Speech & Language 81 (2023): 101520.
2022	C. Suslu **Eray Eren**, and C. Demiroglu. "Uncertainty assessment for detection of spoofing attacks to speaker verification systems using a Bayesian approach". Speech Communication 137 (2022): 44-51.

Conference Publications

2026	K. Zhang, M. Shi, **Eray Eren**, N. B. Shankar, Z. Wang, and A. Alwan, "STACODEC: Semantic Token Assignment For Balancing Acoustic Fidelity and Semantic Information in Audio Codecs". ICASSP (2026). Accepted.
2025	**Eray Eren**, Q. Liu, H. Kim, P. Garrido, and A. Alwan, "ProMode: A Speech Prosody Model Conditioned on Acoustic and Textual Inputs". INTERSPEECH (2025).
2025	N. B. Shankar, Z. Wang, **Eray Eren**, A. Alwan. "Selective Attention Merging for low resource tasks: A case study of Child ASR". ICASSP (2025).
2023	**Eray Eren**, L. N. Tan, and A. Alwan (2023). "FusedF0: Improving DNN-based F0 Estimation by Fusion of Summary-Correlograms and Raw Waveform Representations of Speech Signals". In Proc. INTERSPEECH 2023 (pp. 4523–4527).(Oral)

Graduate Coursework

Advanced Deep Learning, Advanced Digital Speech Processing, Large Scale Data Mining, Predictive Analytics, Machine Learning with Python, Machine Learning in Finance, Mathematical & Statistical Foundations of Analytics, Matrix Analysis

Technical Skills

Experienced   Speech Processing, Speaker & Style-Adaptive Expressive Text-to-Speech, Uncertainty in Deep Learning, Transformers, Generative Models (AR language models, diffusions, and flow matching), Adversarial Networks, Neural Vocoders, Spoofing Detection for Automatic Speaker Verification Systems, Research & Development, Python, PyTorch, C, MATLAB, Linux