

# Working towards a pipeline for clinical speech AI that generalizes



**Visar Berisha, PhD**  
Professor, Arizona State  
University, USA

The dominant paradigm in clinical speech analytics has been supervised machine learning. Despite many years of work by academic and industry research labs, and thousands of publications, the translation of techniques developed under this paradigm has been slow. The focus of this talk will be on why this is and what we can do about it. We will discuss converging evidence collected from multiple systematic reviews that the traditional supervised machine learning paradigm leads to overoptimistic estimates of how well these models actually work when deployed. Next, we will discuss an alternate approach to development of speech-based clinical tools, one that emphasizes the need for more rigorous validation frameworks and is rooted in clinically-important representations of speech. We demonstrate how this approach can be used to translate a tool for assessment of articulatory precision in patients with amyotrophic lateral sclerosis (ALS) from ideation to implementation to FDA-informed validation.

the  
**CHAI**  
talk series

## About the Speaker

Visar Berisha is a Professor at Arizona State University, with a joint appointment in the College of Engineering and the College of Health Solutions; and Associate Dean for Research Commercialization in the College of Engineering. His main research interests reside at the intersection of AI and the human voice. He has developed and commercialized new AI models for healthcare and for mitigating risks from deepfakes. This work is primarily funded by the National Institutes of Health, the Department of Defense, and the National Science Foundation. This work has led to many academic publications, several patents, and two companies. Berisha's work has been featured in the New York Times, on ESPN, National Public Radio, the Wall Street Journal, and a number of other international media outlets. He is the 2023-2024 ISCA Distinguished Lecturer.

Venue: Online  
Time: 8 PM IST  
Date: 16-Sep-24

Organized by  
**Mehta Family  
School of  
Data Science  
& Artificial  
Intelligence**

Indian Institute of Technology  
Guwahati,  
Guwahati-781039, India