



## TECHNOLOGY

# Speaker Independent Speech Inversion System

## OVERVIEW

### Background

Speech inversion is the process of mapping acoustic signals into articulatory parameters. This is a well-known ill-posed problem and the addition of individual speaker differences make it even harder to solve. Normalizing the speaker differences is essential to effectively using multi-speaker articulatory data for training a speaker independent speech inversion system. Currently, there is an essential need to develop a speech inversion system that is speaker independent and can accurately estimate articulatory features for any speaker. Such a system would make a real impact in improving speech accent conversion, speech therapy, language learning, automatic speech recognition, and detection of mental health issues from speech.

### Innovative Technology

Researchers at the University of Maryland have developed a robust and speaker independent speech inversion system. This system is able to perform acoustic-to-articulatory inversion to estimate the 6 Tract Variables, namely – Lip Aperture (LA), Lip Protrusion (LP), Tongue Body Constriction Location (TBCL), Tongue Body Constriction Degree (TBCD), Tongue Tip Constriction Location (TTCL), and Tongue Tip Constriction Degree (TTCD). The software is trained on multi-speaker data in a speaker independent manner to robustly estimate the Tract Variables from speech audio.

Speech Inversion is available for Academic/Non-profit use licensing. Please contact [umventuresstore@umd.edu](mailto:umventuresstore@umd.edu) for more info.

## APPLICATIONS

- Speech Conversion
- Speech Therapy
- Language Learning
- Speech Recognition
- Mental Health Diagnosis

## ADVANTAGES

- Perform acoustic-to articulatory inversion
- Minimizes speaker variability

## CONTACT INFO

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## **Additional Information**

### **INSTITUTION**

University of Maryland, College Park

### **CATEGORIES**

- Software + Algorithm

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