

A/Prof. Sam Madanian



**AUT BRAIN HEALTH
RESEARCH INSTITUTE**



Research focus

Sam is an Associate Professor and researcher at AUT in AI-driven digital health, brain health, and health data science. Her work focuses on developing intelligent systems that support clinical decision-making, public health surveillance, and healthcare system transformation, translating advanced AI and data science into practical healthcare applications. She develops health AI tools that use machine learning to analyse physiological data such as speech, supporting early screening of brain injury, mental health conditions, and neurodegenerative disorders. The work is designed as a clinical decision support system to strengthen telehealth and assist general practitioners in screening and diagnosis.

Current projects

Sam's research programme focuses on "Speech and Behavioural Analytics in Neurodegenerative Disorders" with specific focus on: (1) Mild Traumatic Brain Injury, (2) Mild Cognitive Disorder, and (3) Parkinson's disease

Examples of recent work

Rubaiat, R., Templeton, J. M., Schneider, S. L., Silva, U. D., **Madanian, S.**, & Poellabauer, C. (2025). Exploring speech biosignatures for traumatic brain injury and neurodegeneration: A pilot machine learning study. *JMIR Neurotechnology*, 4.doi:10.2196/64624

Silva, U. D., **Madanian, S.**, Narayanan, A., Templeton, J. M., Poellabauer, C., Schneider, S. L., & Rubaiat, R. (2025). A proof-of-concept development on speech analysis for concussion detection. *Studies in Health Technology and Informatics*, 329, 1008-1012.

Madanian, S., Adeleye, O., Templeton, J.M. et al. (2025). A multi-dilated convolution network for speech emotion recognition. *Sci Rep* 15, 8254 <https://doi.org/10.1038/s41598-025-92640-2>

Positions

Associate Professor - AUT

Contact info

sam.madanian@aut.ac.nz