

Education

Doctoral Candidate,
Department of Electrical, Computer
and Software Engineering,
Faculty of Engineering,
University of Auckland,

B.Sc. (Hons) in Information Technology
Faculty of Information Technology,
University of Moratuwa,
Sri Lanka.

GPA: 3.8 (First Class Honors - Dean's
List)

Scholarships & Awards

University of Auckland Doctoral
Scholarship (2024–Present)

Research Interests

Speech Processing
Artificial Intelligence
Multimodal Learning
Machine Learning
Federated Learning
Privacy-Preserving AI
Mental Health AI
Interpretable AI

Work Experience

Graduate Teaching Assistant,
University of Auckland, New Zealand
(Jul 2025 - present)

Visiting Lecturer, NIBM Sri Lanka
(Jul 2023 - May 2024)

Software Engineer, Mitra Innovation
(Jan 2022 – Jan 2024)
React-based project collaborating with
WSO2 and Huawei technologies.

Trainee Software Engineer, CodeGen
International (Pvt) Ltd
(Jul 2020- Jan 2021)

Dushanthi Madhushika

PhD Candidate (Doctoral Scholar)
ORCID: [0009-0004-3586-763X](#) dmad651@aucklanduni.ac.nz
[LinkedIn](#) [ResearchGate](#) [Google Scholar](#) [Portfolio](#)

Academic Profile

PhD Candidate at the University of Auckland researching speech-based multimodal depression detection, federated learning, and explainable AI for mental healthcare. My research focuses on developing robust, privacy-preserving, and clinically interpretable AI systems for early depression detection using speech and language technologies.

Publications

Journal Articles

Privacy-Enhanced Prototype-Based Federated Learning with Multi-Channel Privacy Evaluation for Speech-Based Depression Detection
ACM Transactions on Computing for Healthcare Journal - Under Review

Adaptive Signal-to-Noise Ratio Data Selection for Robust Multimodal Depression Assessment using Transformer Representations
Cognitive Computation Journal - Under Review

With Data in Mind: AI Applications in Depression, Autism, and Dementia Care
NZMSJ Journal - Published

Conference Papers

Towards Trustworthy Speech-Based Multimodal Depression Detection
ISCA-SAC Doctoral Consortium - Under Review

FedMPA: A Novel Privacy-Performance Optimization Approach for Multimodal Speech-Based Depression Detection
Interspeech 2026 - Accepted

Analyzing trends and topics of Sinhala hate speech on Twitter: A time series approach
ICIIS Conference - Published

Analyzing Mass Media's impact on social media and correlation with Mass Media (Twitter)
ICARC Conference - Published

Other Publications

Quality matters: Improving multimodal speech-based depression detection with quality-aware learning
SMHR and ASBDD 2026 Abstract Conference – Accepted

Speech as a Digital Biomarker for AI-Driven Early Depression Detection
HealtheX Abstract Conference - Published

Academic Service

Conference Reviewing

Reviewer, APSIPA ASC 2025
Reviewer, ICARC 2025
Reviewer, ICTIR 2025

Journal Reviewing

Reviewer, Journal of Medical Internet Research