Special Issue

Advancing Audio/Speech Machine Learning: From Static to Continual Learning

Message from the Guest Editor

Audio and speech signal processing has traditionally relied on static models developed for fixed datasets. However, real-world audio environments are constantly evolving, with new sounds and contexts emerging over time. In such dynamic settings, conventional models struggle to remain effective without frequent retraining. Continual learning offers a promising solution by enabling audio systems to adapt incrementally to new data while retaining previously acquired knowledge. This Special Issue therefore welcomes the submission of original research articles, technical reports, reviews, and mini-reviews that address topics including, but not limited to, the following:

Continual learning algorithms for audio and speech;
Adaptive audio systems for dynamic environments;
Real-time speech recognition and adaptation;
Cognitive and contextual audio processing;
Audio model generalization and robustness;
Integration of speech feedback mechanisms;
Cross-domain continual learning in audio applications;
Mitigating catastrophic forgetting in sequential audio tasks;
Evaluation frameworks for continual learning in audio systems;
Interdisciplinary approaches to adaptive audio processing.

Guest Editor

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Deadline for manuscript submissions

22 July 2026

Acoustics

an Open Access Journal by MDPI

Impact Factor 1.2
CiteScore 3.0

mdpi.com/si/253179

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Message from the Editor-in-Chief

Editor-in-Chief

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