

CALL FOR PAPERS

IEEE Signal Processing Magazine

Special Issue on Fundamental Technologies in Modern Speech Recognition

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Recently, various statistical techniques that form the basis of fundamental technologies underlying today's automatic speech recognition (ASR) research and applications have attracted new attention. These techniques have significantly contributed to progress in ASR, including speaker recognition, and their various applications. The purpose of this special issue is to bring together leading experts from various disciplines to explore the impact of statistical approaches on ASR. The special issue will provide a comprehensive overview of recent developments and open problems.

This Call for Papers invites researchers to contribute articles that have a broad appeal to the signal processing community. Such an article could be for example a tutorial of the fundamentals or a presentation of a state-of-the-art method. Examples of the topics that could be addressed in the article include, but are not limited to:

- Supervised, unsupervised, and lightly supervised training/adaptation
- Speaker-adaptive and noise-adaptive training
- Discriminative training
- Large-margin based methods
- Model complexity optimization
- Dynamic Bayesian networks for various levels of speech modeling and decoding
- Deep belief networks and related deep learning techniques
- Sparse coding for speech feature extraction and modeling
- Feature parameter compensation/normalization
- Acoustic factorization
- Conditional random fields (CRF) for modeling and decoding
- Acoustic source separation by PCA and ICA
- De-reverberation
- Rapid language adaptation for multilingual speech recognition
- Weighted-finite-state-transducer (WFST) based decoding
- Uncertainty decoding
- Speaker recognition, especially text-independent speaker verification
- Statistical framework for human-computer dialogue modeling
- Automatic speech summarization and information extraction

Submission Procedure:

Prospective authors should submit their white papers to the web submission system at <http://mc.manuscriptcentral.com/spmag-ieee>.

Schedule:

- White paper due: October 1, 2011
- Invitation notification: November 1, 2011
- Manuscript due: February 1, 2012
- Acceptance notification: April 1, 2012
- Final manuscript due: May 15, 2012
- Publication date: September 15, 2012