

### 3.14 Automatic Speech Assessment

#### Keywords

Speech assessment; speech signal processing; Markov models

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#### Corporate Sponsorship Program

See Section 4 of the present document

#### File reference & version number:

N/A

## Functional description

Idiap conducts research on the development of automatic speech assessment methods. The R&D activities range from objective assessment of speech intelligibility to automatic accentness evaluation of non-native speech. Automatic speech assessment reduces the need for time-consuming listening tests with human subjects and aids in developing speech communication and assistive speech technologies, such as speech coding, speech synthesis, computer aided language learning (CALL).

## Innovative aspects

- Unified framework to assess speech at various levels, such as phone/phoneme, word
- Quantitative results that can be interpreted like traditional scores from human subjects

## Commercial application examples

- Benchmarking of speech telecommunication or synthesis systems
- Development of assistive technologies such as CALL, pathological speech processing systems

## More information

“Objective Intelligibility Assessment of Text-to-Speech Systems Through Utterance Verification”, Raphael Ullmann, Ramya Rasipuram, Mathew Magimai-Doss and Hervé Bourlard, *Proceedings of Interspeech*, Dresden, Germany, 2015.

## Software & IPR status

The complete software consists of open source softwares such as HTK, Quicknet, SSP (SSP: <https://github.com/idiap/ssp>) and Idiap proprietary code that interfaces the open source tools. Speech databases and lexical resources used for the development of the assessment system may require commercial license.

Application of automatic accent evaluation for CALL is presently licensed to an industrial partner.