

**Media Archiving Research Group, Application of Multimedia Division**

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Application Code : IST-12

**Overview**

Knowledge is created and transferred mostly via media of spoken language. In this Group, we analyze speech communication between human beings, and investigate intelligent systems for automatic speech recognition and understanding. As a basis, we are studying models and processing methods for speech, language and interactions. We are also developing application systems such as automatic transcription systems, spoken dialogue systems, and computer-assisted language learning systems.

Specifically, we deal with real-world communication scenes in which knowledge is exchanged, such as lectures, seminars, poster sessions and parliamentary meetings. One of our goals is to realize efficient searching and browsing of these kinds of large archives by generating appropriate indexes and semantic tags based on spoken language technologies.

**Research Topics**

## 1. Automatic speech recognition and understanding

We are studying automatic speech recognition (ASR) of lectures and meetings, and also natural language processing (NLP) for segmenting and extracting information structures, in order to realize intelligent transcription and captioning systems.

## 2. Interactive information retrieval with spoken dialogue

The current information retrieval scheme such as web search is imperfect and requires a mechanism to narrow retrieved results based on the user's intention and preferences. We are studying spoken dialogue systems for this application.

## 3. Language modeling and interaction analysis

For a basis of the systems mentioned above, we conduct analysis and modeling of natural language and multi-modal interactions.

## 4. Computer-assisted language learning (CALL)

We are involved in research and development of next-generation CALL systems that can automatically check pronunciation of foreign language learners and serve as a virtual language teacher for simulated conversation practice.

**Scope of Group-specific Questions (Master's Program)**

Research in this Group requires familiarity with pattern recognition (machine learning), signal processing, and natural language processing, as well as some basic knowledge on spoken language processing. Reference literature is listed and review articles are available in our website ("Projects" page).

**Contact**

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