Effective Multilingual Interaction in Mobile Environments

Fact Sheet

Project Information

EMIME
Grant agreement ID: 213845

Closed project

Funded under
FP7-ICT

Overall budget
€ 4 329 472

EU contribution
€ 3 050 000

Coordinated by
THE UNIVERSITY OF EDINBURGH
United Kingdom

Start date 1 March 2008
End date 28 February 2011

Project description

Cognitive Systems, Interaction, Robotics

The EMIME project will help to overcome the language barrier by developing a mobile device that performs personalized speech-to-speech translation, such that the user's spoken input in one language is used to produce spoken output in another language, while continuing to sound like the user's voice. Personalisation of systems for cross-lingual spoken communication is an important, but little explored, topic. It is essential for providing more natural interaction and making the computing device a less obtrusive element when assisting human-human interactions. We will build on
recent developments in speech synthesis using hidden Markov models, which is the same technology used for automatic speech recognition. Using a common statistical modelling framework for automatic speech recognition and speech synthesis will enable the use of common techniques for adaptation and multilinguality. Significant progress will be made towards a unified approach for speech recognition and speech synthesis: this is a very powerful concept, and will open up many new areas of research. In this project, we will explore the use of speaker adaptation across languages so that, by performing automatic speech recognition, we can learn the characteristics of an individual speaker, and then use those characteristics when producing output speech in another language.

Our objectives are to: Personalise speech processing systems by learning individual characteristics of a user's speech and reproducing them in synthesised speech; Introduce a cross-lingual capability such that personal characteristics can be reproduced in a second language not spoken by the user; Develop and better understand the mathematical and theoretical relationship between speech recognition and synthesis; Eliminate the need for human intervention in the process of cross-lingual personalisation; Evaluate our research against state-of-the art techniques and in a practical mobile application.

**Fields of science**

> > >

**Programme(s)**

**Topic(s)**

**Call for proposal**

FP7-ICT-2007-1

**Funding Scheme**

**Coordinator**

THE UNIVERSITY OF EDINBURGH

<table>
<thead>
<tr>
<th>Address</th>
<th>Activity type</th>
<th>EU contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Old College, South Bridge, EH8 9YL Edinburgh</td>
<td>Higher or Secondary Education Establishments</td>
<td>€ 700 544</td>
</tr>
</tbody>
</table>
Participants (6)

FONDATION DE L'INSTITUT DE RECHERCHE IDIAP
Switzerland
EU contribution
€ 474 744
Address: Rue Marconi 19, 1920 Martigny
Activity type: Research Organisations
Administrative Contact: Angela Noble (Miss)

NOKIA OYJ
Finland
EU contribution
€ 484 479
Address: Keilalahdentie 4, 02150 Espoo
Activity type: Private for-profit entities (excluding Higher or Secondary Education Establishments)
Website: Contact the organisation
Administrative Contact: Marjo Hiltunen (Ms.)

AALTO KORKEAKOULUSAATIO SR
Finland
EU contribution
€ 0
Address: Otakaari 1, 02150 Espoo
Activity type: Higher or Secondary Education Establishments
Teknillinen korkeakoulu

Finland
EU contribution
€ 476 766

Address
Otakaari 1
02015 Espoo

Website
Contact the organisation

Administrative Contact
Mikko Kurimo (Dr)

NAGOYA INSTITUTE OF TECHNOLOGY

Japan
EU contribution
€ 460 200

Address
29 Aza Kiichi, Gokiso-cho,
Showa-ku
466-8555 Nagoya

Contact the organisation

Administrative Contact
Naoki Toda (Mr)

THE CHANCELLOR MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE

United Kingdom
EU contribution
€ 453 267

Address
Trinity Lane The Old Schools
CB2 1TN Cambridge

Website
Contact the organisation

Administrative Contact
Dawn Barker (Mrs)