

Master Thesis title / MAL izenburua

Obtaining an EMG signal database for silent speech interfaces

Proposer(s) / Proposatzailea(k): names / izenak

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Description / Deskribapena

Silent speech interfaces make it possible to obtain speech from signals obtained by sensors located in the speech organs. In the case of EMG interfaces, the sensors obtain a set of electrical signals from the muscles of the face and neck of the speaker. After applying artificial intelligence techniques (training Deep Neural Networks) it is possible to obtain voice signals corresponding to the silent speech of the person wearing the sensors. Silent speech interfaces can be used to speak through a device (a mobile phone) without being heard in situations of security requirements or simply for the comfort of those close to them.

In the Aholab laboratory, a multichannel acquisition equipment (96 channels) has been acquired together with the EMG sensors. The work will consist of starting up the system, carrying out the initial tests of synchronous EMG and voice recording, use of acquisition software and software development to obtain synchronous data, parameterization of signals, structuring of the database, etc. The objective is to obtain a database of approximately one hour of voice for four people. This database will be used to obtain a reference silent speech synthesis system in Spanish.

The work will be carried out within the framework of the “Voice Restoration with Silent Speech Interfaces (ReSSint)” project, funded by the State Research Agency in collaboration with the University of Granada and the Cognitive System Lab –of the University of Bremen.

Goals / Helburuak

Goals here

Requirements / Betebeharrak

Basic knowledge of electronics for the installation of the equipment will be valued. Knowledge of programming in Matlab and other high-level programs (Python, scripting). Motivation and interest to innovate and solve problems. Capacity for teamwork.

Framework / Esparrua

Aholab laboratory

Tasks and plan / Atazak eta plana

Tasks and plan here if needed