SILENT SPEECH INTERFACES FOR SPEECH RESTORATION: CURRENT STATUS AND FUTURE CHALLENGES

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Abstract

Speech production is a rich and complex process, the acoustic signal being just one of the signals stemming from it. In the last few years, the automatic processing of these non-audible speech-related signals has become a research area on its own: silent speech. One of the most exciting applications of silent speech is the possibility of restoring speech to individuals who have lost the ability to communicate orally after a disease or trauma. In this talk I will present an overview of my previous research on silent speech interfaces, where magnetic sensing is used to monitor the movement of the speech articulators and deep learning techniques are used to synthesize speech from the sensor data. In addition to my own research, I will present the current status of silent speech interfaces and discuss common challenges and solutions in this emerging research area.

Short biography

Jose A. Gonzalez is a lecturer in the Department of Languages and Computer Sciences, University of Malaga, Spain. He received the B.Sc. and Ph.D. degrees in Computer Science, both from the University of Granada, Spain, in 2006 and 2013, respectively. During his Ph.D. he did two research visits at the Speech and Hearing Research Group, University of Sheffield, U.K, to study missing data approaches for noise robust speech recognition. From 2013 to 2018 he was a Research Associate at the University of Sheffield working in clinical applications of speech technology. He has co-/authored more than 60 international articles published in books, journals, and proceedings. He has received several scientific awards for his work, including AELFA-IF 2018 best paper award, BioDevices 2018 best paper award, BioSignals 2015 best paper award, EUSIPCO 2014 best student paper award, RTTH best journal paper award and the AVIOS Speech Application Contest 2007/2008 award.