

ASA Spring 2020

View Abstract

CONTROL ID: 3372500**TITLE:** Speech recognition of spoken Italian based on detection of landmarks and other acoustic cues to distinctive features**AUTHORS (FIRST NAME, LAST NAME):** Maria-Gabriella Di Benedetto¹, Jeung-Yoon Choi², Stefanie Shattuck-Hufnagel², Luca De Nardis³, Sara Budoni³, Jacopo Vivaldi³, Javier Arango⁴, Alec DeCaprio⁴, Stephanie Yao⁴**INSTITUTIONS (ALL):** 1. Radcliffe Institute for Advanced Study at Harvard University, Cambridge, MA, United States, and Sapienza University of Rome, Rome, Italy.

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ABSTRACT BODY:

Abstract (200 words): Modeling the process that a listener actuates in deriving words intended by a speaker, requires setting a hypothesis on how lexical items are stored in memory. Stevens' model (2002) postulates that lexical items are stored in memory according to distinctive features, and that these features are hierarchically organized. The model highlights the importance of abrupt acoustic events, named landmarks, in the perception process. In this model, the detection of landmarks is primary in human perception, corresponding to the first phase of recognition. The temporal area around the landmark is then further processed by the listener. Based on the above model, the Speech Communication Group of the Massachusetts Institute of Technology (MIT) developed a speech recognition system - for spoken English - over a span of more than 20 years. In the current work (LaMIT project, Lexical access Model for Italian) the above model is applied to Italian. Exploring a new language will provide insight into how Stevens' approach has universal application across languages, with relevant implications for understanding how the human brain recognizes speech.

Stevens, K. N. (2002). "Toward a model for lexical access based on acoustic landmarks and distinctive features," Journal of Acoustical Society of America, 111(4):1872-1891.

CURRENT TECHNICAL COMMITTEE: Speech Communication**CURRENT SPECIAL SESSION. IF NOT SUBMITTING TO A SPECIAL SESSION, CHOOSE "NONE SELECTED.":** None Selected**PRESENTATION TYPE:** Contributed Submission : Either**PRESENTER:** Maria-Gabriella Di Benedetto**AWARDS:** ASA Best Paper Awards For Students and Young Presenters**AV Equipment:** (none)**Additional Comments:** (none)**PACS Numbers:** 43.72.Ne**AUTHORS (ADDRESS & EMAIL):****Name:** Maria-Gabriella Di Benedetto, Dr.**Address 1:** Via Eudossiana 18**Address 2:** (none)**City:** Rome**State:** (none)

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