



Amirkabir University of Technology (Tehran Polytechnic)
Department of Computer Engineering and Information Technology

MSc Thesis Defense in Artificial Intelligence (AI)

Improvement in Spoken Term Detection Systems using Supervised and Unsupervised Techniques and Semantic Knowledge

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Abstract: A spoken term detection system can detect spoken user's query and retrieve related spoken documents. Our proposed spoken term detection system can process spoken Archive (lots of spoken documents) without its transcription. Our proposed system represents each spoken document with our encoder-decoder models in a new informative space. Generated representation has informative semantic and robust feature. At the end, each spoken document in the archive is converted to a new informative representation. When user's query enters to our system, our encoder models convert this to the new representation. In this new informative space, the query is compared with each spoken document in the spoken archive, and then documents are ranked regarding to their relatedness to the query. This thesis has some contributions in generation of informative representation such as feedforward neural network, generative adversarial feedforward neural network, recurrent neural network and generative adversarial recurrent neural networks. Besides two retrieval algorithms including unigram model and extended Lesk algorithm are proposed.

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