Mahsa Elyasi (Mahsa Sadat Elyasi Langarani)

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RESEARCH INTERESTS

Machine learning and its applications in language and speech processing.

EDUCATION

Ph.D., Computer Science and Engineering
Center for Spoken Language Understanding, OHSU, Portland, OR, expected 2019

M.Sc., Computer Engineering, Artificial Intelligence
Sharif University of Technology, Tehran, IRAN, September 2012

B.Sc., Computer Engineering, Software Engineering
University College of Nabi Akram, Tabriz, IRAN, September 2010

POSITIONS

ObEN Inc., Pasadena, CA — Spring 2017
Speech Research Intern

- TTS adaptation: Developed an intonation adaptation model to transform the perceived identity of a DNN-based TTS (Merlin) system to that of a target speaker. Resulting in higher similarity compared to baseline.
- TTS: developed a discrete cosine transform (DCT) intonation model for generating fundamental frequency (F_0) contour in Mandarin. Achieving higher naturalness compared to rule-based approach.
- Chinese data preparation: worked with linguistics to create prosodically rich sentences for purpose of TTS and TTS-adaptation. Developed a TextGrid code to speed up the labeling process and error checking.

ObEN Inc., Pasadena, CA — Summer 2016
Speech Research Intern

- Speech-To-Music: developed a biLSTM syllabification method to generate syllable boundaries given speech signal and phonetic labels. Achieving F_1 measure of 95.
- TTS: developed a superpositional intonation model for English. Achieving higher naturalness compared to intonation generated with HTS.

Sensory, Inc., Portland, OR — Fall 2015
Speech Research Intern

- Implementing frequency-domain PSOLA.
- Implementing a codebook-based Voice Conversion system

Center for Spoken Language Processing, OHSU, Portland, OR 2012 - Present
Graduate Research Assistant

- Experimenting effect of fundamental frequency (F_0) contour in speaker group classification using combination of CNN and RNN.
- Proposed a generalized intonation model for the English language.
- Developing and inventing various Machine learning method to examine the performance of the proposed intonation model in different speech processing applications, including TTS, TTS adaptation, and speaker group classification.

PUBLICATIONS

M.S. Elyasi Langarani, J. van Santen, Investigating prosodic unit effects of fundamental frequency dynamics in clear and conversational speech (under submission).
M.S. Elyasi Langarani, J. van Santen, Prosody based dialect classification using NMF and sparsity criteria (under submission).
M.S. Elyasi Langarani, J. van Santen, Recurrent Convolutional Neural Networkfor Classification of Speaker Groups based on Prosodic Information, 12th Women inMachine Learning Workshop (WiML), 2017.
M.S. Elyasi Langarani, J. van Santen, Automatic, model-based detection of pauseless phrase boundaries from fundamental frequency and duration features, 9th ISCASpeech Synthesis Workshop, 2016.
M.S. Elyasi Langarani, J. van Santen, Foot-based Intonation for Text-to-SpeechSynthesis using Neural Networks, Speech Prosody 2016.
M.S. Elyasi Langarani, J. van Santen, Speaker Intonation Adaptation for Transforming Text-To-Speech Synthesis Speaker Identity, ASRU 2015.
M.S. Elyasi Langarani, J. van Santen, S.H. Mohammadi, A. Kain, Data-driven Foot-based Intonation Generator for Text-to-Speech Synthesis, Interspeech 2015.
M.S. Elyasi Langarani, J. van Santen, Modeling fundamental frequency dynamicsin hypokinetic dysarthria, SLT 2014.
M.S. Elyasi Langarani, E. Klabbers, J. van Santen, A Novel Pitch Decompositionmethod for the Generalized Linear Alignment Modle, ICASSP 2014.
M.S. Elyasi Langarani, H. Veisi, H. Sameti: The effect of phase information inspeech enhancement and speech recognition. ISSPA 2012.
S.H. Mohammadi, H. Sameti, **M.S. Elyasi Langarani**, , A. Tavanaei, KNNDIST: ANonparametric distance measure for speaker segmentation, Interspeech 2012.

ACTIVITIES

Reviewer
Interspeech
WIML
Organizing Committee, Volunteer at Interspeech 2012 conference.
Student Member, ISCA, IEEE Signal Processing Society
Award
Top student in bachelor of Science class (GPA: 3.83)
Nominated by OHSU for a HHMI fellowship 2015

COMPUTER SKILLS

Languages: Python, R, C++.
ML Toolkits: Keras, TensorFlow.
Speech Toolkits: Merlin, Festival, HTS, Praat, TextGrid.

REFERENCES

Jan van Santen*, Professor, Center for Spoken Language Understanding, Oregon Health and Science University,* `vansantj@ohsu.edu`.
Alexander Kain*, Associate Professor, Center for Spoken Language Understanding, Oregon Health and Science University,* `kaina@ohsu.edu`.
Abeer Alwan*, Professor and Vice Chair, Electrical and Computer Engineering, University of California, Los Angeles (UCLA)* `alwan@ee.ucla.edu` .