Xiaoting Fu

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OBJECTIVES

- Specialized in Spoken Language Processing (SLP) and Machine Learning.
- Looking for SLP/NLP or SE related internship positions.

EDUCATION

Ph.D. in Computer Science: North Carolina State University (NCSU), Raleigh, NC — Aug 2017 – Present
- Cumulative GPA: 3.7 / 4.0, Expected Graduation: May 2021

B.S. in Computer Science: Wenzhou-Kean University (WKU), Zhejiang, China — Sep 2013 – Jun 2017
- Cumulative GPA: 3.9 / 4.0 (Graduated with College Honors)

SKILLS AND INTERESTS

Languages: Python, Shell, Java, CSharp, SQL
Speech Recognition: Kaldi, CMU Sphinx, DeepSpeech
Gesture Recognition: Kinect, Leap Motion
OS & Container: Unix OS, Windows, Docker

PROFESSIONAL EXPERIENCE

Software Engineer Intern | ABB | Raleigh, NC — May 2018 – Aug 2018
- Worked on ABB GridView Project. Aimed at 1) providing an user interface for database interaction 2) visualizing abstract energy marketing data and generate 3)
- My contributions include: 1) developed tools to convert between different format of databases (SQLite and MS Access DB). 2) programmed tools for database comparison, changes review and apply changes from one database to another one. 3) designed visual interfaces for the SQLite database editing. 4) implemented a SQL Parser for generating SQL action queries based on composite display queries.

SELECTED PROJECTS

FLECKS Project | ArgLab, NCSU | Raleigh, NC — Jan 2018 - Present

Intelligent Agent Prototyping
- Aimed at developing a virtual learning companion for kids learning computer programming.
- My contributions include: 1) deployed the RHEL server for web hosting with Docker Container. 2) coded the website to stream audio using Socket.io. 3) integrated the Kaldi toolkit as a web service.

Continueous Speech Recognition for Children
- Aimed at building an Automatic Speech Recognition (ASR) engine to recognize continuous children speech.
- My contributions include: 1) **Audio Analysis:** evaluated audio quality using signal-to-noise ratio and visualize the results. 2) **Transcription Processing:** applied forced alignment to get the timestamps of the human generated transcriptions. 3) **Acoustic and Language Model Training:** used Kaldi nnet3 to train an acoustic model with for 40 hours of children's speech and use Librispeech corpus to train the language model. 4) **Toolkits Comparison:** compared word-error-rate (WER) of the existing open-source speech recognition toolkits on children speech corpus including Kaldi and CMU Sphinx. 5) **Model Improvement:** applied speaker adaptation, vocal tract length normalization (VTLN) to improve the existing models.

Spoken Language Assessment for ESL Learner | NCSU — Sept 2018 - Present (Ongoing Project)
- Aimed at building an automatic spoken language assessment system based on the grammatical and semantical correctness of speech responses.
- My contributions include: 1) trained an ASR engine with 9,000+ utterances from ESL learners along with 1,000+ hours external speech. 2) applied pitch normalization and speech adaptation techniques to reduce differences between different models. 3) trained a supervised neural network classifier on the output transcription for response quality assessment.

Social Intervention for Children with Autism Spectrum Disorder (ASD) | WKU — Apr 2015 –Jun 2016
- Aimed at building an educational game for children with ASR and also increase the awareness of the ASD.
- My contributions include: 1) conducted background research on accessibility of Technology-Based Intervention (TBI) for Chinese children with ASD. 2) designed the website of WKU Autism Network. 3) composed and edited the research booklet: Autism Advocate to increase people's understanding of ASD. 4) programmed a Leap Motion touchless drawing application for social skill intervention.

AWARDS & ACTIVITIES

- Outstanding University Graduate, Zhejiang Province — 2017
- Dean's List, Fall 2013 through Spring 2017, College of Natural Science — 2013 – 2017
- Microsoft Kinect Hackathon, Third Class, Microsoft, Beijing, China — 2014