Trang Tran

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EDUCATION

University of Washington, Seattle, WA   Jun 2014 - present
PhD Candidate, Electrical Engineering
- Research areas & interests: speech processing, natural language processing; applications of speech and NLP to health, education, and social science

Bucknell University, Lewisburg, PA
M.S., Electrical Engineering   Aug 2012 - May 2014
- Research areas: speech enhancement, voice conversion
- Thesis: *Noise-robust Voice Conversion*

B.S., Electrical Engineering and *B.A.*, Economics   Aug 2007 - May 2012
- Summa Cum Laude

PUBLICATIONS

- Trang Tran and Mari Ostendorf. 2016. "Characterizing the Language of Online Communities and Its Relation to Community Reception." In *Proc. Conf. Empirical Methods Natural Language Process. (EMNLP)*, pp. 1030-1035.

- Gina-Anne Levow, Valerie Freeman, Alena Hrynkevich, Mari Ostendorf, Richard Wright, Julian Chan, Yi Luan, and Trang Tran. 2014. "Recognition of stance strength and polarity in spontaneous speech." In *Proc. IEEE Spoken Language Technology Workshop (SLT)*, pp. 236-241.

- Trang Tran. 2014. "Noise-robust Voice Conversion." Master's Thesis, Electrical Engineering, Bucknell University

RESEARCH EXPERIENCE

Syntactic Constituent Parsing of Speech   Jun 2016 - present
Project started while at Toyota Technological Institute at Chicago (TTIC) as a visiting student/graduate intern
- Implemented a many-to-one encoder-decoder neural network for constituent parsing of conversational speech, using both transcription and speech features
- Analyzed how speech features can be used effectively in improving parsing performance

Characterization and Detection of Online Community Language and Online Community Endorsement   Jun 2015 - Jun 2016
- Implemented style and topic models for characterizing language of Reddit discussions
- Investigated metrics and features for detecting community endorsement on Reddit discussions

Acoustic Modeling for Lexical Difficulty and Stress   Jun 2014 - Aug 2015
- Investigated lexical difficulty features for text simplification based on analysis of reading by low-literacy adults and anomalies in prosodic and duration cues
- Studied acoustic models of stress for use in language acquisition and intelligibility scoring

Speech Enhancement and Voice Conversion with Inventory Style Approaches
Aug 2012 - May 2014
- Studied filter- and inventory-based speech enhancement methods and speech processing methods for auditory focus improvement and voice transformation
- Implemented an inventory-based noise-robust voice conversion system

Classifiers for Haptic Signature Verification
Mar 2016 - Jun 2016
- Implemented various classifiers using wavelet-based features for touch-screen based signature verification
- Analyzed classifier performance under various scenarios (same vs. next day; finger vs. pen)

Other Research Experiences
Jun 2009 - May 2012
- *Summer 2012*: Simulated models and investigated the efficiency of a smart photovoltaic module under various shading scenarios; assisted in the design and implementation of a customizable photovoltaic module prototype
- *Summer 2011*: Investigated and simulated sensor systems for source localization; studied the basics of information theory and pattern recognition
- *Summer 2009*: Designed and implemented a sensor system on a robotic fish for acceleration data acquisition

TEACHING EXPERIENCE

Electrical Engineering Department, University of Washington
March 2015 - present
- Responsibilities: held laboratory sections and MATLAB tutorial sessions; assisted students with homework; assisted in course material revision and preparation
- Courses: Continuous Time Linear Systems (Winter 2016, Autumn 2016), Discrete Time Linear Systems (Spring 2015)

Electrical Engineering & Physics Departments, Bucknell University
Aug 2008 - May 2014
- Responsibilities: assisted students with lab equipment, procedures, and homework problems; graded students lab reports and homework assignments
- Courses: Fundamentals of Electrical Engineering, Circuit Theory I & II, Linear Systems and Signal Processing, Electronics I & II, Electrical Control Systems, Theory and Applications of Electromagnetics, Electrical Energy Conversion, Classical and Modern Physics I & II

SKILLS

Computing:
- Proficient: Python (sklearn, gensim, tensorflow), MATLAB, LaTeX, PSpice
- Basic knowledge: Java, Bash, Kaldi, AutoCAD, PSCAD, Freescale Microcontroller and Microchip PIC Assembly, ExpressPCB

Languages: Vietnamese (native), English (fluent), French (conversational)

LEADERSHIP & SERVICE

Graduate Student Association, Member
University of Washington, Seattle, WA
May 2016 - present
- Organized a set of lightning talks showcasing graduate research in UW's Electrical Engineering department
- Assisted in organizing prospective student visit day and new student orientation activities

Graduate Admissions Student Reviewer

University of Washington, Seattle, WA   Dec 2014 - Jan 2015
- Assisted in reviewing graduate admission applications to UW's Electrical Engineering graduate program

Saturday School Tutor

Seattle World School, Seattle, WA   Feb 2015 - May 2015
- Tutored middle & high school students with math and writing assignments; helped newcomer ESL students with English reading practice exercises

International Orientation Assistant & Leader

Bucknell International Student Services, Lewisburg, PA   Aug 2008 - May 2012
- Prepared orientation activities and materials for incoming international students; trained junior International Orientation Assistants
- Welcomed and familiarized students with Bucknell resources and services

Bucknell Brigade, Member

Bucknell Office of Civic Engagement, Lewisburg, PA   Sep 2010 - May 2012
- Fund-raised for maintaining a health clinic in Managua, Nicaragua
- Traveled to Nicaragua in March 2011 to assist with various tasks in the clinic and Managua community

HONORS & AWARDS

Grants and Scholarships:
Grace Hopper Celebration of Women in Computing Scholarship 2015
Graduate Summer Research Fellowship (Summer 2013)
Richard McGinnis International Engineering Study Scholarship (Summer 2013)
Fremont International Student Scholarship (2007-2012)
Bucknell Provost Office Grant for Undergraduate Research (Summer 2009)

Awards:
The Professor George Allison Irland Prize 2012
The William C. Gretzinger Prize 2012
The Ernest and Josephine Christensen Award 2012
The Jeffrey James Harold Prize 2008

Honor Societies: Phi Beta Kappa, Tau Beta Pi, Omicron Delta Epsilon, Alpha Lambda Delta

OTHER EXPERIENCE

Classroom and Event Support Student Assistant

Bucknell Library and Information Technology, Lewisburg, PA Sep 2012 - May 2014
- Responded to urgent technical malfunctions during campus events
- Assisted with maintaining and updating classroom resources

Electrical Engineering Intern

Cannon Design, Boston, MA   Jun 2010 - Aug 2010
- Assisted in the design and specification of lighting, fire alarm, power distribution and nurse call systems
- Assisted in calculations for lighting power consumptions and voltage drops
- Transferred red line mark-ups on AutoCAD and Revit based projects