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

RESEARCH EXPERIENCE

Graduate Research Assistant — Jun 2014 - present
University of Washington, TIAL Lab, Seattle, WA

- **Neural Prosody Models for Spoken Language Processing**
  - Integrated a convolutional neural network to characterize prosody features with an attention-enabled encoder-decoder model for constituent parsing of conversational speech
  - Analyzed the ability of prosodic features to correct parse error types; analyzed the effects of transcription errors on parsing performance
- **Characterization and Detection of Online Community Language and Online Community Endorsement**
  - Implemented style and topic models for characterizing language of Reddit discussions
  - Investigated metrics and features for detecting community endorsement on Reddit discussions
- **Acoustic-Prosodic Cues to Oral Reading Intelligibility and Difficulty**
  - 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

Research Intern — Jun 2018 - Sep 2018
Liulishuo/LingoChamp, San Mateo, CA

- **Modeling Prosody for Second Language Learning**
  - Exploring computational models for integrating acoustic-prosodic information in second-language learning applications, with focus on syntax and pronunciation

Applied Scientist Intern Jun 2017 - Aug 2017
Amazon Alexa Shopping Team, Seattle, WA

- **Ranking Models for Amazon's Choice**
  - Explored ranking algorithms and developed novel models for selecting Amazon's Choice items
  - Analyzed the utility of language features applied to Amazon's Choice models

Visiting Graduate Intern Jun 2016 - Sep 2016
Toyota Technological Institute at Chicago (TTIC), Chicago, IL

- **Syntactic Constituent Parsing of Speech**
  - Implemented a many-to-one encoder-decoder neural network for constituent parsing of conversational speech, using both transcription and acoustic speech features
  - Studied how speech features can be used effectively in improving parsing performance, with focus on the utility of prosody

Graduate Research Assistant Aug 2012 - May 2014
Bucknell University, Electrical and Computer Engineering, Lewisburg, PA

- **Speech Enhancement and Voice Conversion using Inventory Style Approaches**
  - Studied and implemented 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

PUBLICATIONS

- **Trang Tran**, Shubham Toshniwal, Mohit Bansal, Kevin Gimpel, Karen Livescu, Mari Ostendorf. 2018. "Parsing Speech: A Neural Approach to Integrating Lexical and Acoustic-Prosodic Information." In *Proc. Conf. of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (NAACL-HLT)*, pp. 69-81
- **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 Processing. (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, Bucknell University

TEACHING EXPERIENCE

Electrical Engineering Department, University of Washington
March 2015 - present

- Courses: Continuous Time Linear Systems (Winter 2016, Autumn 2016), Discrete Time Linear Systems (Spring 2015)
- Teaching assistantship responsibilities: assisted in course material revision; ran laboratory sections and MATLAB tutorial sessions; assisted students with homework assignments

Electrical Engineering & Physics Departments, Bucknell University
Aug 2008 - May 2014

- 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
- Teaching assistantship responsibilities: assisted students with lab equipment, procedures, and homework problems; graded students lab and homework assignments

LEADERSHIP & OUTREACH

Graduate Staff Assistant
University of Washington, Seattle, WA May 2016 - present

- Organize an annual set of graduate talks showcasing UW's Electrical Engineering department's research
- Assist in reviewing graduate admission applications to UW's Electrical Engineering graduate program
- Assist in organizing prospective student visit day, new student orientation activities, and recruiting events

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 exercises

Bucknell Brigade, Member
Bucknell Office of Civic Engagement, Lewisburg, PA Sep 2010 - May 2012

- Fund-raised for maintaining a health clinic in Managua, Nicaragua; assist with various tasks in the clinic and Managua community

International Orientation Assistant and 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

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 Ernest and Josephine Christensen Award 2012
The Jeffrey James Harold Prize 2008

SKILLS

Computing:

- Proficient: Python (sklearn, tensorflow, keras), MATLAB LaTeX, PSpice
- Basic knowledge: Java, Bash, C, C++

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