

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 Aug 2012 - May 2014
M.S., Electrical Engineering
- 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
- **Dialog Strategies for Child-Robot Collaborative Learning**
 - Analyze child-robot interaction data for disfluencies, hesitation, and backchannel phenomena
 - Study locations and strategies for teachers to ask children questions in an interactive story-telling task
 - Implement and evaluate automatic question generation within story context
 - **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**
 - Explored computational models for integrating acoustic-prosodic information in second-language learning applications, with focus on syntax

- Analyzed differences in L1 vs. L2 speech effects on parsing results

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**, Jiahong Yuan, Yang Liu, Mari Ostendorf. 2019, “On the Role of Style in Parsing Speech with Neural Models.” In *Proc. Interspeech*
- Vicky Zayats, **Trang Tran**, Courtney Mansfield, Richard Wright, Mari Ostendorf. 2019, “Disfluencies and Human Speech Transcription Errors.” In *Proc. Interspeech*
- **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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	Lead Teaching Assistant	
	<i>University of Washington, Seattle, WA</i>	September 2019 - present <ul style="list-style-type: none"> • Mentor junior teaching assistants (TAs); hold teaching workshops and peer meetings; maintain teaching resources for department TAs • Serve as a liaison between teaching assistants and faculty in the department, ensuring the well-being and quality of TAs
	Graduate Staff Assistant	
	<i>University of Washington, Seattle, WA</i>	May 2016 - June 2017 <ul style="list-style-type: none"> • Organized an annual set of graduate talks showcasing UW's Electrical Engineering department's research • Assisted in reviewing graduate admission applications to UW's Electrical Engineering graduate program • Assisted in organizing prospective student visit day, new student orientation activities, and recruiting events
	Saturday School Tutor	
	<i>Seattle World School, Seattle, WA</i>	Feb 2015 - May 2015 <ul style="list-style-type: none"> • Tutored middle & high school students with math and writing assignments; helped newcomer ESL students with English reading exercises
	Bucknell Brigade, Member	
	<i>Bucknell Office of Civic Engagement, Lewisburg, PA</i>	Sep 2010 - May 2012 <ul style="list-style-type: none"> • 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	
	<i>Bucknell International Student Services, Lewisburg, PA</i>	Aug 2008 - May 2012 <ul style="list-style-type: none"> • 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

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

SKILLS

Computing:

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

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