

## 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*, pp. 4190–4194
- Vicky Zayats, **Trang Tran**, Courtney Mansfield, Richard Wright, Mari Ostendorf. 2019, “Disfluencies and Human Speech Transcription Errors.” In *Proc. Interspeech*, pp. 3088–3092



- 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**

*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

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

### **SKILLS**

#### **Computing:**

- Proficient: Python (sklearn, tensorflow, pytorch), MATLAB L<sup>A</sup>T<sub>E</sub>X, PSpice
- Basic knowledge: Java, Bash, C, C++

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