

## Trang Tran

185 Stevens Way  
Box 352500  
Seattle, WA 98195

ttmt001@uw.edu  
students.washington.edu/ttmt001

**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\***, Shubham Toshniwal\*, Mohit Bansal, Kevin Gimpel, Karen Livescu, Mari Ostendorf. 2017. “Joint Modeling of Text and Acoustic-Prosodic Cues for Neural Parsing.” arXiv preprint. arXiv:1704.07287, 2017.
  - **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, Bucknell University

**RESEARCH**     **Syntactic Constituent Parsing of Speech**     Jun 2016 - present  
**EXPERIENCE**     *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 acoustic speech features
- Analyzed how speech features can be used effectively in improving parsing performance, with focus on the utility of prosody

**Ranking Models for Amazon’s Choice**     Jun 2017 - Aug 2017  
*Applied Scientist Intern, Amazon Alexa Shopping Team, Seattle, WA*

- 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

**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 - present

- 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 using Inventory Style Approaches** Aug 2012 - May 2014

- 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

**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
- *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 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, tensorflow, keras), MATLAB L<sup>A</sup>T<sub>E</sub>X, PSpice
- Basic knowledge: Java, Bash, C, C++

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

## LEADERSHIP & OUTREACH

### Graduate Student 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 organizing prospective student visit day and new student orientation activities
- Assist 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

### 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
- Welcomed and familiarized students with Bucknell resources and services

## 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