

# Bo-Ru (Roy) Lu

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## Research Interests

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Deep learning and its applications on natural language generation (NLG) and understanding (NLU).

## Education

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- **University of Washington**, Seattle, WA Sep. 2018 - present  
Ph.D. in Electrical & Computer Engineering  
Overall GPA: 3.90/4.00  
Advisor: Prof. Mari Ostendorf
- **National Taiwan University**, Taipei, Taiwan Sep. 2016 - Jul. 2018  
M.S. in Communication Engineering  
Advisor: Prof. Lin-Shan Lee & Prof. Hung-Yi Lee  
Overall GPA: 4.00/4.00  
Relevant coursework GPA: 4.00/4.00
- **National Taiwan University**, Taipei, Taiwan Sep. 2012 - Jun. 2016  
B.S. in Electrical Engineering  
Overall GPA: 3.65/4.00  
Last 60 GPA: 4.00/4.00  
Relevant coursework GPA: 4.00/4.00

## Publications

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- **B.-R. Lu**, F. Shyu, Y.-N. Chen, H.-Y. Lee, L.-S. Lee. "Order-Preserving Abstractive Summarization for Spoken Content Based on Connectionist Temporal Classification," in INTERSPEECH 2017.

## Research Experiences

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- **Applied research intern**, NLP team, Apple Inc., Cupertino, CA Jan. 2018 - Apr. 2018  
Manager: Dr. Jerome Bellegarda & Xin Wang  
Improved and developed IOS input methods.
- **Research assistant**, Speech Processing Lab, NTU, Taipei, Taiwan. Feb. 2015 - Jul. 2016  
phoneme recognition & attention-based models for text documents and spoken content summarization.

## Awards and Honors

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- **Hsing Tian Kong Long-Term Fellowship for Cultivating Elite Students**, Hsing Tian Kong Dec. 2017  
Fellowship to support elite students with the acceptance rate of 0.1%.
- **Advanced Speech Technologies Scholarship**, NTU Sep. 2017  
Recognizes students with excellent academic performance in speech processing (3 recipients in the year).
- **International Speech and Communication Association Student Travel Grants**, ISCA Aug. 2017
- **NTU Electrical Engineering 1960 Alumni Scholarship**, NTU Sep. 2015  
Recognizes undergraduates in EE with excellent academic performance (2 recipients a year).

## Teaching Experiences

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- **CSIE 5440, Intelligent Conversational Bot** Jan. 2017 - Jun. 2017  
Instructor: Prof. Yun-Nung (Vivian) Chen
- **EE 5177, Machine Learning** Sep. 2016 - Jun. 2017  
Instructor: Prof. Hung-Yi Lee  
Lead TA: led the team of 13 TAs and tutored 278 students in the course.
- **CSIE 5431, Applied Deep Learning** Sep. 2016 - Jan. 2017  
Instructor: Prof. Yun-Nung (Vivian) Chen

## Selected Term Projects

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- **Movie Bot** Jun. 2017  
CSIE 5440, Intelligent Conversational Bot  
Conditional language generation: generated a sentence according to users' current emotion.
- **Visual Question Answering** Jan. 2016  
CommE 5045, Machine Learning and Having It Deep and Structured  
Designed a combined network of LSTM and CNN for answering multiple-choice questions about images.
- **Spoken Term Detection Using Dynamic Time Wrapping** Jun. 2015  
EE 4049, Introduction to Digital Speech Processing.  
Modified and designed a DTW algorithm to reduce retrieval time without reducing performance.

## Relevant Coursework

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- **Machine Learning and language & speech processing**  
Digital Speech Processing\*, Applied Deep Learning\*, Deep and Structured Learning\*, Intelligent Conversational Bot\*, Machine Learning\*, Data Science\*, Web Retrieval and Mining\*, Multimedia Analysis and Indexing\*
- **Computer Science**  
Operating Systems, Systems Programming, the Design and Analysis of Algorithms\*, Algorithms, Data Structure, Embedded System, Computer Networks, Introduction to Computer, Computer Programming

\* denotes graduate-level course.

## Service

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- **Second-Round Reviewer**  
INTERSPEECH 2017, ICASSP 2017, ICJNLP 2017, EMNLP 2017.

## Skills

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- **Languages:** Mandarin (native), English (professional working proficiency)
- **Programming Languages:** Python (familiar), Shell Script (familiar), C/C++,  $\text{\LaTeX}$
- **Tools:** PyTorch, Tensorflow, Keras, Scikit-learn, Git