

# Ting-Wei Lu

MACHINE LEARNING · NATURAL LANGUAGE PROCESSING · SOFTWARE ENGINEERING

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## Education

### National Taiwan University

Taipei, Taiwan

B.S. in Engineering Science and Ocean Engineering (ESOE)

Sep. 2016 - Aug. 2020

- GPA: 3.86

## Publications

[1] Kai-Ling Lo, **Ting-Wei Lu**, Tzu-Teng Weng, I-Hsuan Chen, Yun-Nung Chen. 2020. Lion-net: Lightweight ontology-independent networks for schema-guided dialogue state generation. In Dialog System Technology Challenge Workshop at AAAI.

## Work & Teaching Experience

### Chinese Knowledge and Information Processing Laboratory, Academia Sinica

Taipei, Taiwan

Research Assistant (Full Time)

Aug. 2020 - Present

- Advisor: Prof. Ma, Wei-Yun
- Redesigned relative positional encoding schema such that graph structure can be integrated into language model with minimum computation cost.
- Devised a dynamic content planning schema for Data-to-Text Generation that mimics the thought process of humans.
- Demo: <https://ckip.iis.sinica.edu.tw/service/data2text/>

### National Taiwan University

Taipei, Taiwan

Research Assistant (Part-Time)

Mar. 2020 - Jun. 2020

- Advisor: Prof. Liu, Helen K
- Improved & deployed a web-scraping system with a 400% speed-up compared to the prior system.
- Designed a syntax processing pipeline that extracts essential information and calculates the similarity between job posting and school curriculum.

Teaching Assistant

Sep. 2019 - Jan. 2020

- [EE5184] Machine Learning (2019 Fall)

### Cathay Financial Holdings Co., Ltd.

Taipei, Taiwan

Data Scientist Intern

Jul. 2019 - Jun. 2020

- Developed an unsupervised representation learning toolkit for tabular data. Boosting the performance of a variety of downstream tasks.
- Toolkit: <https://github.com/dwaydwaydway/BERTable>

## Research

### Machine Intelligence and Understanding Laboratory (Miulab)

National Taiwan University

Advisor: Prof. Yun-Nung (Vivian) Chen

Mar. 2019 - Jun. 2020

- Competed in DSTC8. Became the only team to defeat the baseline model without pre-trained language model. Paper accepted @ AAAI workshop.
- Survey on various topics on NLG such as humor generation and conversational reasoning.

### Computational Knowledge Laboratory

National Taiwan University

Advisor: Prof. Chien-Kang Huang

Mar. 2020 - Jun. 2020

- Devised a transformer-based model and training schema to enable join-pretraining of categorical and numerical features of tabular data.

### Natural Language Processing Laboratory

National Taiwan University

Advisor: Prof. Hsin-Hsi Chen

Mar. 2019 - Jun. 2019

- Survey on Complex Knowledge Base Question Answering and Natural Language to SPARQL Translation

## Competitions

- |      |   |                |
|------|---|----------------|
| 2019 | <b>20<sup>th</sup> / 26 teams.</b> The 8 <sup>th</sup> Dialog System Technology Challenge.                  | DSTC8          |
| 2019 | <b>Third Runner-Up ( 4<sup>th</sup> / 124 schools).</b> National University/College Rubber Baseball Series. | Taiwan         |
| 2019 | <b>1<sup>st</sup> / 14 teams.</b> Self-Navigating Boat In-Class Contest.                                    | NTU ESOE       |
| 2017 | <b>Honorable Mention.</b> National Taiwan University System App Creativity Contest.                         | Taipei, Taiwan |

## Skills

**Programming** Python · C++ · Java · C · Shell Scripting · SQL · Matlab (Ordered by proficiency)

**Libraries & Toolkits** PyTorch · Tensorflow · Selenium · Git · Linux

## Extracurricular Activities

### Varsity Baseball Team

National Taiwan University

- Member of the varsity baseball team throughout senior high and shortly in college. Won 2 regional championships.

### Tutoring

Taipei, Taiwan

- Programming · Automatic Control · Math