

# Lang-Chi Yu

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## Education

### University of Southern California

M.S. IN COMPUTER SCIENCE

Los Angeles, California

Aug. 2018 — Expected May 2020

### National Taiwan University

M.S. IN COMMUNICATION ENGINEERING

Taipei, Taiwan

Sep. 2015 — Jun. 2017

- Master thesis: “Abstractive Headline Generation for Spoken Content with ASR Error Modeling.”<sup>1,2</sup>

B.S. IN ELECTRICAL ENGINEERING

Sep. 2010 — Jun. 2014

## Experience

### Research Center for Information Technology Innovation, Academia Sinica

RESEARCH ASSISTANT

Taipei, Taiwan

Aug. 2017 — Expected Jul. 2018

- Proposed Siamese convolutional deep models for hit song prediction for popular music.<sup>3</sup>
- Implemented the Siamese models with Python TensorFlow, which outperformed previous simple deep models with an improvement in Kendall's tau (performance metric for ranking songs) from 0.1080 to 0.2421 on a commercial song dataset from KKBOX Inc., Taiwan.
- Constructed a standardized and publicly-available hit song prediction benchmark with Million Song Dataset and a YouTube crawler.<sup>4</sup>

### Graduate Institute of Communication Engineering, National Taiwan University

TEACHING ASSISTANT

Taipei, Taiwan

Sep. 2015 — Jan. 2017

- Guided students and led discussions in EE4049 Undergraduate Special Project (Topics: Summarization).

### BoniO Inc.

FOUNDING DEVELOPER & WEB DEVELOPER

Taipei, Taiwan

Mar. 2013 — Sep. 2013

- Developed PaGamO<sup>5</sup>, the world's first MOOC-based multi-student gaming platform for courses on Coursera.
- Participated in PaGamO framework design.
- Developed website front-end (real-time player status update; messaging and announcement system) with Ruby on Rails and JQuery.

## Skills

### Programming

- Python
  - Experience in Django, Theano, TensorFlow.
  - Developed the on-line course website with Django for EE2011 Signals and Systems given by Speech Lab. at National Taiwan University.
- JavaScript
  - Experience in web development with Node.js, React, Semantic UI.
  - Maintained Node.js back-end demo websites of Speech Lab. at National Taiwan University, including an on-line large-vocabulary continuous speech recognition (LVCSR) system and an audio-based search engine.
- Ruby
  - Experience in web development with Ruby on Rails (RoR)<sup>5</sup>.

### Machine Learning

- TensorFlow
  - Experience in convolutional neural networks (CNN) for hit song prediction and music auto-tagging from raw audio (spectrograms)<sup>3</sup>.
- Torch (Lua)
  - Experience in sequence-to-sequence (S2S) recurrent neural networks (RNN) for natural language processing.
  - Proposed and implemented novel attentive RNN architecture incorporating ASR error modeling mechanism that enabled spoken content headline generation model to learn from abundant text data and little ASR data, which was accepted by IEEE SLT 2016<sup>2</sup>.

<sup>1</sup><http://www.airitilibrary.com/Publication/alDetailedMesh1?DocID=U0001-0108201700422900>

<sup>2</sup>Lang-Chi Yu, Hung-yi Lee, and Lin-shan Lee, “Abstractive Headline Generation for Spoken Content by Attentive Recurrent Neural Networks with ASR Error Modeling,” IEEE Workshop on Spoken Language Technology, Dec. 2016.

<sup>3</sup>Lang-Chi Yu, Yi-Hsuan Yang, Yun-Ning Hung, and Yi-An Chen, “Hit Song Prediction for Pop Music by Siamese CNN with Ranking Loss,” arXiv preprint arXiv:1710.10814 (2017)

<sup>4</sup>[https://github.com/OckhamsRazor/MSD\\_YouTube\\_crawler](https://github.com/OckhamsRazor/MSD_YouTube_crawler)

<sup>5</sup><https://www.pagamo.org/>