Lang-Chi Yu

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Education

University of Southern California *Los Angeles, California*

M.S. IN COMPUTER SCIENCE *Aug. 2018 — Expected May 2020*

National Taiwan University *Taipei, Taiwan*

M.S. IN COMMUNICATION ENGINEERING *Sep. 2015 –– Jun. 2017*
- Master thesis: "Abstractive Headline Generation for Spoken Content with ASR Error Modeling."[1,2]

B.S. IN ELECTRICAL ENGINEERING *Sep. 2010 –– Jun. 2014*

Experience

Research Center for Information Technology Innovation, Academia Sinica *Taipei, Taiwan*

RESEARCH ASSISTANT *Aug. 2017 –– Jul. 2018*
- In collaboration with Machine Learning Research Team of KKBOX Inc., Taiwan[3,4], proposed Siamese convolutional deep models for hit song prediction for popular music[5] and implemented the models with Python TensorFlow, which made great improvement in Kendall's tau (performance metric for ranking songs) from 0.1080 to 0.2421 compared to previous simple deep models on a commercial song dataset from KKBOX Inc.
- Constructed a standardized and publicly-available hit song prediction benchmark with Million Song Dataset and a YouTube crawler[6].

Graduate Institute of Communication Engineering, National Taiwan University *Taipei, Taiwan*

TEACHING ASSISTANT *Sep. 2015 –– Jan. 2017*
- Guided students and led discussions in EE4049 Undergraduate Special Project (Topics: Summarization).

BoniO Inc. *Taipei, Taiwan*

FOUNDING DEVELOPER & WEB DEVELOPER *Mar. 2013 –– Sep. 2013*
- Developed PaGamO[7], the world's first MOOC-based multi-student educational gaming platform, used by well-known MOOC platform Coursera.
- Designed game mechanics of PaGamO.
- Developed website front-end (realtime player status, messaging, announcement systems) with Ruby on Rails and JQuery.

Skills

Programming

- Python
  - Experience in Django, Theano, TensorFlow.
  - Developed the online course website with Django for EE2011 Signals and Systems given by NTU Speech Lab.
- JavaScript
  - Experience in web development with Node.js, React, Semantic UI.
  - Maintained NTU Speech Lab. demo websites based on Node.js, including an online large-vocabulary continuous speech recognition (LVCSR) system and an audio-based search engine.
- Ruby
  - Experience in web development including Ruby on Rails (RoR)[7].
- Java
  - Experience in Android app development.

Machine Learning

- TensorFlow
  - Experience in convolutional neural networks (CNN) for hit song prediction and music auto-tagging from raw audio (spectrograms)[5].
- Torch (Lua)
  - Experience in sequence-to-sequence (S2S) recurrent neural networks (RNN) for natural language processing (NLP).
  - Proposed and implemented novel attentive RNN architecture incorporating automatic speech recognition (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[2].

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[1] http://www.airitilibrary.com/Publication/alDetailedMesh1?DocID=U0001-0108201700422900

[2] 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.

[3] https://www.kkbox.com/tw/en/index.html

[4] Yi-An Chen (annchen@kkbox.com)

[5] 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)

[6] https://github.com/OckhamsRazor/MSD_YouTube_crawler

[7] https://www.pagamo.org/