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*

- Cumulative GPA: 3.74/4.00

National Taiwan University (NTU) *Taipei, Taiwan*

M.S. in Communication Engineering *Sep. 2015 –– Jun. 2017*

- Master thesis: "Abstractive Headline Generation for Spoken Content with ASR Error Modeling."
- 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 with reference headlines and little ASR data instead of from large number of spoken documents with reference headlines, which are more difficult to acquire[1].
- Generated the finding that proposed architecture outperformed RNN and ARNN models that were trained on pure text data with an increase in ROUGE-1 (correctness metric for summarization) from 21.87 to 22.89.

B.S. in Electrical Engineering *Sep. 2010 –– Jun. 2014*

- Cumulative GPA: 3.87/4.30
- Dean's List (top 5%) in Spring 2012

Experience

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

Research Assistant *Aug. 2017 –– Jul. 2018*

- Devised a new approach to hit song prediction problem, i.e., predicting song's popularity score in a popular music market, by incorporating song ranking model into previous song rating model as Siamese convolutional neural networks (CNN).
- Collaborated with Machine Learning Research Team of KKBOX Inc., Taiwan, implemented the Siamese CNN 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 of KKBOX.[2]
- Constructed a standardized and publicly-available hit song prediction benchmark with Million Song Dataset and a YouTube crawler.

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

Web Developer *Sep. 2015 –– Jun. 2017*

- Developed the online course website with Python Django for EE2011 Signals and Systems given by NTU Speech Lab.
- Maintained NTU Speech Lab. demo websites based on Node.js, including an online LVCSR system and an audio-based search engine.

BoniO Inc. *Taipei, Taiwan*

Founding Developer & Web Developer *Mar. 2013 –– Sep. 2013*

- Developed PaGamO, the world's first MOOC-based multi-student educational gaming platform, used by MOOC platform Coursera.
- Developed web front-end (realtime player status, messaging, announcement systems) with Ruby on Rails, JQuery, AJAX, and MySQL.

Skills

Programming

- Programming in languages including Python, JavaScript, Ruby, Java, C++, Lua, Perl, MySQL.
- Python
  - Experience in Django, Theano, TensorFlow.
- JavaScript
  - Experience in web development including Node.js, React, Semantic UI.
- Ruby
  - Experience in web development including Ruby on Rails (RoR).
- Java
  - Experience in Android app development.
  - Designed and built Android event manager application with web client to search, manage, import, export, and display upcoming events in user-friendly format, e.g., calendar or map, in course project of EE3002 Network and Multimedia Lab in Fall 2013 at NTU.

Machine Learning

- TensorFlow
  - Experience in convolutional neural networks (CNN) for hit song prediction and music auto-tagging from raw audio (mel-spectrograms)[2].
- Torch (Lua)
  - Experience in sequence-to-sequence (S2S) recurrent neural networks (RNN) for natural language processing (NLP), e.g., automatic summarization and headline generation for spoken documents and news[1].

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[1] 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.

[2] 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).