Lang-Chi **Yu**
RESEARCH ASSISTANT · SOFTWARE ENGINEER INTERN

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Research Interests

Machine learning, information retrieval, automatic summarization, hit song prediction and generation

Education

National Taiwan University   *Taipei, Taiwan*

M.S. IN COMMUNICATION ENGINEERING   *Sep. 2015 –– Aug. 2017*

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

- GPA: 4.01/4.3 (Major), 3.87/4.3 (B.S.), 3.78/4.3 (Cumulative)

Publications

[1] **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"**, Oct. 2017 (ICASSP '18 Submitted).

[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*, Sep. 2016.

[3] Sz-Rung Shiang, Po-Wei Chou, and **Lang-Chi Yu**. **"Spoken Term Detection and Spoken Content Retrieval: Evaluations on NTCIR 11 SpokenQuery&Doc Task."**, in *Proceedings of the 11th NTCIR Conference*, 2014, pp. 371–375.

Research Experience

Hit Song Prediction for Pop Music [1]   *Aug. 2017 — PRESENT*

ADVISOR: DR. YI-HSUAN YANG, MUSIC AND AUDIO COMPUTING LABORATORY, ACADEMIA SINICA

- Proposed multi-objective Siamese CNN model to learn both hit scores and relative ranking of songs jointly from primitive audio features
- Devised a number of Siamese pair sampling methods to overcome data-specific problems; e.g., A/B sampling alleviates data imbalance problem in KKBOX dataset
- Outperformed previous works regarding hit song prediction as a regression or classification problem

Abstractive Headline Generation for Speech with ASR Error Modeling [2]   *Apr. 2016 — Jul. 2017*

ADVISOR: PROF. LIN-SHAN LEE, SPEECH PROCESSING AND MACHINE LEARNING LABORATORY, NTU

- Proposed novel attentive RNN architecture incorporating ASR error modeling mechanism
- Enabled spoken content headline generation model to learn from abundant text data and little ASR data
- Outperformed RNN and ARNN models trained on pure text data

NTCIR-11 SpokenQuery&Doc Task [3]   *Sep. 2013 –– Jun. 2014*

ADVISOR: PROF. LIN-SHAN LEE, SPEECH PROCESSING AND MACHINE LEARNING LABORATORY, NTU

- Considered acoustic feature similarity between utterances over both word and sub-word lattices to tackle general problem of open-vocabulary retrieval with variable-length queries in STD task
- Utilized Rocchio Algorithm, query expansion using RNNLM, and lecture slide similarity feedback using random walk to improve relevance of first-pass retrieval in SCR task

Work Experience

Academia Sinica [1]   *Taipei, Taiwan*

RESEARCH ASSISTANT (FULL-TIME)   *Aug. 2017 –– PRESENT*

KKBOX Inc. [1]   *Taipei, Taiwan*

SOFTWARE ENGINEER INTERN (PART-TIME)   *Aug. 2017 –– PRESENT*

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

TEACHING ASSISTANT   *Sep. 2015 –– Jan. 2017*

- Undergraduate Special Project (Topics: Summarization; Spoken Dialogue System)

Compulsory Military Service, Taiwan Coast Guard *Yunlin, Taiwan*
PLATOON LEADER, SECOND LIEUTENANT *Aug. 2014 –– Jul. 2015*

Department of Electrical Engineering, National Taiwan University *Taipei, Taiwan*
WEB DEVELOPER (PART-TIME) *Mar. 2013 –– Sep. 2013*
- Developed PaGamO, the world's first MOOC-based multi-student web game for course on Coursera
- Framework design of project
- Website front-end design and development

Department of Electrical Engineering, National Taiwan University *Taipei, Taiwan*
ELECTRICAL ENGINEERING STUDENT ASSOCIATION MEMBER *Feb. 2012 –– Jun. 2014*
- Assisted academic affairs in EE department with EE course registration, introduction to undergraduate courses and research, and textbook service

Honors & Awards

Advanced Speech Technologies Scholarship *Oct. 2016*
GRADUATE INSTITUTE OF COMMUNICATION ENGINEERING, NATIONAL TAIWAN UNIVERSITY
- 2–4 recipients, approximately US $16,000 per person per year

Bronze Medal *Sep. 2013*
ALTERA INNOVATE ASIA FPGA DESIGN COMPETITION
- Implemented FPGA-optimized SAD algorithm on DE2-115 to detect user's gestures
- Designed and built a USB interface between FPGA board and personal computer for users to control the cursor via the system directly

Presidential Award *Oct. 2012*
DEPARTMENT OF ELECTRICAL ENGINEERING, NATIONAL TAIWAN UNIVERSITY
- Ranked in top 5% of class in previous semester

Selected Course Projects

Campus Events Manager *Fall 2014*
NETWORK AND MULTIMEDIA LAB
- Designed and built Android application with web client to search, manage, import, export, and display upcoming events in user-friendly format (e.g., calendar or map)

Cheat: How AI Lies and Responds to Lies *Fall 2013*
ARTICIAL INTELLIGENCE
- Designed AI systems for "Cheat" card game to examine how intelligent agents change strategies given opponent behavior in highly-untrusted environments

Turing Machine from Google Doodle *Fall 2013*
EMBEDDED SYSTEM LAB
- Implemented Turing Machine, a mini-game from Google Doodle, with ARM Cortex-M4 microprocessor and Arduino Uno microcontroller board

Skills

Programming	Python, JavaScript, Lua, C/C++, JAVA, Android, MATLAB, LaTeX
Machine Learning	Kaldi, Torch, Theano, TensorFlow
Web Development	Django, Node.js, React.js, Semantic-UI, MySQL, MongoDB
Languages	Mandarin Chinese, English, Japanese, Taiwanese Hokkien

Standardized Test Scores

TOEFL ibt	Total 102 / Reading 30 / Listening 27 / Speaking 22 / Writing 23	*Sep. 2016*
GRE revised general test	Verbal 157 / Quantitative 170 / Analytical Writing 3.0	*Feb. 2014*