HAN-YUN(HENRY) YEH

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github.com/henry034/

EDUCATION

National Chiao Tung University Hsinchu, Taiwan *Sep. 2016 - June 2019*

- M.S. in Communications Engineering (GPA: 4.02/4.3)

National Taipei University Taipei, Taiwan *Sep. 2012 - June 2016*

- B.S. in Communications Engineering (Rank: 1st, GPA: 3.72/4.0)

HORNORS AND AWARDS

Research

· **6th Place** (2017) - IJCNLP Shared Task 2 [3] - Taipei, Taiwan
· **1st Place** (2015) - NTPU CE Senior Project Competition - Taipei, Taiwan
· **Best Paper Award** (2014) - Oriental COCOSDA [4] - Phuket, Thailand

Academic

· **Phi Tau Phi Award** (2016) - The Phi Tau Phi Scholastic Honor Society, Taipei Taiwan
Award for top-ranked student in CE department among all classes
· **Dean's List** (Fall '12, Fall '15) - NTPU CE Dept. - Taipei, Taiwan
· **Scholarship** (2014) - Elytone Electronic CO., LTD. - Taipei, Taiwan
· **Honorable Mention** (2014) - Taiwan National Collegiate Programming Contest - Taipei, Taiwan

RESEARCH EXPERIENCE

National Chiao Tung University Hsinchu, Taiwan
Graduate Student/Research Assistant, Speech Processing Lab *Sep. 2016 - Jan. 2019*

· Chinese pinyin to character language model using deep learning [1]

- Experimented with sequence labeling (TDNN and BLSTM joint learning with word boundary prediction) and seq2seq (Transformer) models to minimize Chinese pinyin to character recognition issues
- Preprocessed data from Wikipedia, LDC Chinese Gigaword, and Sinica corpus by utilizing high precision CRF-based Chinese parser and rule-based G2P (character to pinyin) systems, resulting in a reduction of the character's error rate to 5.6%

· Dimensional sentiment analysis for Chinese phrases (DSAP) [3]

- Achieved a mean rank of 6.5 among 24 submissions on Chinese phrases' valence and arousal prediction problems using the proposed order-aware word2vec and BLSTM models with the CAVT (Chinese Valence-Arousal Text) corpus

· Child Speech Impairment Supporting System

- Collected and analyzed approximately 200 samples from children and implemented a Java GUI based corpus recording system for children with speech impediments in coordination with NTU Hospital Hsinchu

National Taipei University Taipei, Taiwan
Research Assistant, Speech and Multimedia Signal Processing Lab *Sep. 2012 - June 2016*

· *"An Automatic Grade Input System via Voice"*

  – Constructed a speech recognition system that featured energy-based voice activity detection and a beam-forming noise cancellation module to enter student's grades automatically. The project was awarded 1st place in NTPU CE Senior Project Competition

· Mandarin prosody generation [2][4]

  – Investigated improving CRF-based base-phrase chunk features and punctuation confidence in Mandarin text-to-speech system
  – Labeled base-phrase chunk features by using CRF-based base-phrase chunker
  – Generated CRF-based punctuation confidence for each lexical word boundary from input text tagged with Chinese word boundaries, part of speech (POS), and base-phrase chunk to measure the likelihood of inserting a punctuation mark (PM)
  – Applied the above features in a MLP-based prosody generator and confirmed that the RMSE for predicting logF0, syllable duration, energy level, and pause duration were reduced

PUBLICATIONS

[1] **Han-Yun Yeh**. "end-to-end pinyin to character language model using self-attention mechanism". Master's thesis, National Chiao Tung University, 2019

[2] Chen-Yu Chiang, Yu-Ping Hung, **Han-Yun Yeh**, I-Bin Liao, and Chen-Ming Pan. Punctuation-generation-inspired linguistic features for Mandarin prosody generation. *EURASIP Journal on Audio, Speech, and Music Processing*, 2019(1):4, 2019

[3] Yen-Hsuan Lee, **Han-Yun Yeh**, Yih-Ru Wang, and Yuan-Fu Liao. Nctu-ntut at ijcnlp-2017 task 2: Deep phrase embedding using bi-LSTMs for valence-arousal ratings prediction of Chinese phrases. In *Proceedings of the IJCNLP 2017, Shared Tasks*, pages 124–129, 2017

[4] Yu-Ping Hung, **Han-Yun Yeh**, I-Bin Liao, Chen-Ming Pan, and Chen-Yu Chiang. An Investigation on linguistic features for Mandarin prosody generation. In *2014 17th Oriental Chapter of the International Committee for the Co-ordination and Standardization of Speech Databases and Assessment Techniques (COCOSDA)*, pages 1–5. IEEE, 2014

WORK EXPERIENCE

IBM, Inc Taipei, Taiwan
Application Developer *June 2018 - Oct. 2018*

· Organized health knowledge collected from the internet using text processing techniques and designed rule-based health information suggestions using Python according to user's information with data from a wearable device or entered manually by the user

· Designed a backend infrastructure to collect and analyze website user behavior by means of JavaScript, Python, PHP, MongoDB, MySQL and deployed service on AWS

Application Developer Intern *Jul. 2017 - Aug. 2017*

· Implemented an automated optical inspection (AOI) algorithm to detect defects in circuit board labels using Python with OpenCV

TECHNICAL STRENGTHS

Computer Languages	Python, C, Java, Javascript, PHP
Databases & Cloud service	MySQL, PostgreSQL, AWS
Frameworks & packages	TensorFlow, Pytorch, OpenCV