

Chao-Chun Hsu

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Research Interests

Natural Language Processing, Information Solicitation, Emotion Recognition in Dialogues, Language & Vision

Education

University of Colorado Boulder

USA

PhD student in Computer Science

2019 - present

Advisor: Prof. Chenhao Tan

National Taiwan University

Taiwan

BS in Computer Science and Information Engineering, GPA (Last 60) : 3.89/4.30

2013 - 2017

Selected Courses (all graduate level):

Machine Learning, Applied Deep Learning, Intelligent Chat Bot, Information Visualization

Research Experiences

Natural Language Processing and Computational Social Science Lab, University of Colorado Boulder

Research Assistant, Advisor: Prof. Chenhao Tan

2019 - present

○ Understanding the Value of Notes in Electronic Health Record (Information Solicitation)

- Discovered that NOUNs are more important than ADJs and VERBs in physician notes of MIMIC-III dataset for in-hospital mortality prediction task
- Finetuned GPT-2 language model on physician notes and found sentences with low perplexity have more predictive values than sentences with high perplexity for in-hospital mortality prediction task

Natural Language Processing and Sentiment Analysis Lab, Academia Sinica

Research Assistant, Advisor: Dr. Lun-Wei Ku

2017 - 2019

○ Visual Storytelling

- Utilized knowledge graph to enrich visual storytelling by linking terms between two consecutive images. The proposed three-stage framework can be enhanced by external resources on each stage without images-to-story pairs. (Publication [1], Grants [a] & [b])
- Constructed an interactive visual storytelling system. Users can modify the detected terms within the images to construct desired stories via a web application, (Publication [2], Grant [c])
- Proposed an Inter-Sentence Diverse Beam Search method to reduce the redundancy sentence of similar images sequence and improve the Meteor score by 2.4% versus baseline model, (Publication [4], Grant [e])

○ Textual Emotion Recognition in Dialogues

- Exploited the turn-taking information in dialogue emotion recognition task and achieved 3% improvement on IEMOCAP dataset by modeling emotional states of different speakers
- Organized a challenge in SocialNLP2018: *EmotionX Challenge: Recognizing Emotion in Dialogues*, (Publication [5])
- Collected emotional dialogue dataset from Friends TV show transcript and EmotionPush real chat log and labeled data by Amazon Mechanical Turk, (Publication [6], Grant [d], [Dataset link](#),)

Publications

- [1] **Knowledge-Enriched Visual Storytelling**, C.-C. Hsu*, Z.-Y. Chen*, C.-Y. Hsu, C.-C. Li, T.-Y. Lin, T.-H. Huang, L.-W. Ku, *AAAI 2020* ([Paper link](#)) (*equal contribution)
- [2] **Dixit: Interactive Visual Storytelling via Term Manipulation**, C.-C. Hsu*, Y.-H. Chen*, Z.-Y. Chen*, H.-Y. Chen, T.-H. Huang, L.-W. Ku, *WWW 2019 Demo* (*equal contribution)
- [3] **Entropy-Enhanced Multimodal Attention Model for Scene-Aware Dialogue Generation**, K.-Y. Lin, C.-C. Hsu, Y.-N. Chen, L.-W. Ku, *DSTC7 collocated with AAAI 2019*
- [4] **Using Inter-Sentence Diverse Beam Search to Reduce Redundancy in Visual Storytelling**, C.-C. Hsu, S.-M. Chen, M.-H. Hsieh, L.-W. Ku, *Storytelling workshop collocated with NAACL 2018* ([Paper link](#))

- [5] **SocialNLP 2018 EmotionX Challenge Overview: Recognizing Emotions in Dialogues**, C.-C. Hsu, L.-W. Ku, *SocialNLP 2018 collocated with ACL 2018* ([Paper link](#))
- [6] **EmotionLines: An Emotion Corpus of Multi-Party Conversations**, S.-Y. Chen*, C.-C. Hsu*, C.-C. Kuo, T.-H. Huang, L.-W. Ku, *LREC 2018* ([Paper link](#)) (*equal contribution)

Grants & Awards

- [a] **2020 AAAI Scholarship (\$200)**, For attending AAAI Conference, Association for the Advancement of Artificial Intelligence
- [b] **2020 Travel Grant (\$300)**, For attending AAAI Conference, University of Colorado Boulder
- [c] **2019 Travel Grant (\$3000)**, For attending International World Wide Web Conference, Academia Sinica
- [d] **2018 Travel Grant (\$2000)**, For attending Language Resources and Evaluation Conference, Academia Sinica
- [e] **2017 Research Scholarship for Undergraduate Student (\$500)**, Ministry of Science and Technology Taiwan

Service

Reviewer: LREC2020

Technical Skills

Languages: Python, L^AT_EX, C

Packages: Pytorch, Numpy, Tensorflow, Django