

CHIEN-SHENG (JASON) WU

INTERACTIVE SYSTEMS · NATURAL LANGUAGE PROCESSING · MACHINE LEARNING

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Education

MPhil, Hong Kong University of Science and Technology (HKUST), Hong Kong 2017-present

- Electronic & Computer Engineering.
- Advisor: Prof. Pascale Fung

Bachelor, National Taiwan University (NTU), Taipei, Taiwan 2012-2016

- Electrical Engineering.
- Overall GPA: 3.93/4.30 Major GPA: 4.00/4.30

Research Experience

Salesforce Research, California, USA Fall 2018

- Deep Learning Intern (Advisor: Dr. Caiming Xiong)
- Working on dialog system and its applications.

Center of AI Research (CAiRE), HKUST, Hong Kong 2017 - present

- Graduate Researcher (Advisor: Prof. Pascale Fung)
- Proposed memory-to-sequence dialog systems to incorporate knowledge bases. Combined memory network with pointer network as a neural generative model. [ACL 2018]
- Proposed dynamic query memory network (DQMemNN) for next utterance classification. Captured dialog's sequential dependencies by the designed recurrent component. [ICASSP 2018]
- Won second prize in first track of Dialog System Technology Challenges 2017. Proposed a practical entity-value independent framework based on Recurrent Entity Networks. [DSTC6]

Human Language Technology Center (HLTC), HKUST, Hong Kong 2016

- Research Assistant (Advisor: Prof. Pascale Fung)
- Collaborated in building virtual empathetic android, Zara the Supergirl, which is a personality detection robot using facial and speech emotion recognition. [COLING 2016]
- Improved real-time speech emotion recognition and sentiment analysis using CNN with raw audio instead of feature engineering. [EMNLP 2016]

Automation Laboratory, Academia Sinica, Taiwan 2016

- Research Assistant (Advisor: Dr. Jing-Sin Liu)
- Conducted comparative study on Bezier lane-change curves for unicycle robots. [IEEE ROBIO]

Access IC Lab, NTU, Taiwan 2014 - 2015

- Research Assistant (Advisor: Prof. An-Yeu Andy Wu)
- Proposed hybrid precoding strategy using DFT matrix and k-means algorithm. Reduced complexity by more than 85% with less than 4% performance loss. [IEEE ICSPCC]

Honors & Awards

Postgraduate Studentship, Electronic & Computer Engineering, HKUST 2017

Dean's List Award, School of Engineer, HKUST Spring 2016

Irving T. Ho Memorial Scholarship, Electrical Engineering & Computer Science, NTU 2016

- Awarded to 3 undergraduates for outstanding academic performance.

Best Paper Award, IEEE ICSPCC Aug 2016

First Place, Hackathon, Microsoft Research Asia Aug 2015

- Won among 34 universities across China, Taiwan, and Hong Kong.

Work & Leadership

Teaching Assistant, HKUST

Spring 2018

- Building Interactive Intelligent Systems (comp4901I / elec4010I)

Activity Director, NTUEE Student Association

Sep 2014 - Sep 2015

- Lead 50+ students to organize 10+ activities for 1000+ NTUEE students

Selected Projects

Embedded System & Web Programming, NTUEE

Fall 2016

- An interactive boxing game using Raspberry Pi, Arduino and 6-DOF sensors. [demo]
- A visualization platform retrieving the referred and cited academic papers. [demo]

Deep and Structured Machine Learning, NTUEE

Fall 2015

- Automatic speech recognition (ASR) systems using DNN-HMM, CRF, and RNN.
- Visual question answering (VQA) using CNN, word embeddings and random forest.

Skills & Languages

- PyTorch, TensorFlow, Keras, Theano, Scikit-learn, Caffe, LibSVM
- Python (familiar), C++ (familiar), Matlab (familiar), JavaScript, Verilog, LaTeX
- English (Fluent), Mandarin (Native)

Publications

1. **Chien-Sheng Wu***, Andrea Madotto*, Pascale Fung, “Mem2Seq: Effectively Incorporating Knowledge Bases into End-to-End Task-Oriented Dialog Systems,” (long) in *Proc. Association for Computational Linguistics (ACL)*, 2018.
2. Genta Indra Winata, **Chien-Sheng Wu**, Madotto Andrea, Pascale Fung, “Bilingual Character Representation for Efficiently Addressing Out-of-Vocabulary Words in Code-Switching Named Entity Recognition,” in *ACL Workshop on Computational Approaches to Linguistic Code-switching*, 2018.
3. **Chien-Sheng Wu**, Andrea Madotto, Genta Indra Winata, Pascale Fung, “End-to-End Dynamic Query Memory Network for Entity-Value Independent Task-Oriented Dialog,” in *Proc. IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, 2018.
4. P. Fung, D. Bertero, P. Xu, JH Park, **Chien-Sheng Wu**, A. Madotto., “Empathetic Dialog Systems,” in *Proc. Language Resources and Evaluation Conference (LREC)*, 2018.
5. **Chien-Sheng Wu***, Andrea Madotto*, Genta Indra Winata, Pascale Fung, “End-to-End Recurrent Entity Network for Entity-Value Independent Goal-Oriented Dialog Learning,” in *Dialog System Technology Challenges (DSTC)*, 2017.
6. **Chien-Sheng Wu**, Zih-Yun Chiu, Jing-Sin Liu “Simulations for Time-Optimal Trajectory Planning along Parametric Polynomial Lane-Change Curves for a Unicycle,” in *Proc. IEEE International Conference on Robotics and Biomimetics (ROBIO)*, 2017.
7. D. Bertero, F. Siddique, **Chien-Sheng Wu**, Y. Wan, R. Chan and P. Fung, “Real-Time Speech Emotion and Sentiment Recognition for Interactive Dialogue Systems,” (short) in *Proc. Empirical Methods on Natural Language Processing (EMNLP)*, 2016.
8. P. Fung, D. Bertero, Y. Wan, A. Dey, R. Chan, F. Siddique, Y. Yang, **Chien-Sheng Wu**, Ruixi Lin, “Towards Empathetic Human-Robot Interactions,” in *Proc. Computational Linguistics and Intelligent Text Processing (CICLing)*, 2016.
9. P. Fung, A. Dey, F. Siddique, R. Lin, Y. Yang, D. Bertero, W. Yan, **Chien-Sheng Wu**, “Zara: A Virtual Interactive Dialogue System Incorporating Emotion, Sentiment and Personality Recognition,” in *Proc. International Conference on Computational Linguistics (COLING)*, 2016.
10. **Chien-Sheng Wu**, Chiang-Hen Chen, Cheng-Rung Tsai, and An-Yeu (Andy) Wu, “Joint RF/Baseband Grouping-based Codebook Design for Hybrid Beamforming in mmWave MIMO Systems,” in *Proc. IEEE International Conference on Signal Processing, Communications and Computing (ICSPCC)*, 2016.