YI-TING YEH

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EDUCATION

National Taiwan University *Sep. 2018 - Present*
Master of Science in Computer Science
Advisor: Yun-Nung (Vivian) Chen

National Taiwan University *Sep. 2014 - Jun. 2018*
Bachelor of Science in Computer Science. GPA: 4.14/4.30, Rank: 7/120

PUBLICATIONS

Yi-Ting Yeh, and Yun-Nung Chen. Qainfomax: Learning robust question answering system by mutual information maximization. In *Proceedings of the 2019 Conference on Empirical Methods in Natural Language Processing (**EMNLP2019**)*, 2019

Yi-Ting Yeh, and Yun-Nung Chen. Flowdelta: Modeling flow information gain in reasoning for conversational machine comprehension (under review). In *1th Workshop on NLP for ConvAI (Cross Submission)*, 2019

Yi-Ting Yeh, Tzu-Chuan Lin, Hsiao-Hua Cheng, Yi-Hsuan Deng, Shang-Yu Su, and Yun-Nung Chen. Reactive multi-stage feature fusion for multimodal dialogue modeling. In *7th Dialog System Technology Challenge (**DSTC7**) in the Proceedings of Thirty-Third AAAI Conference on Artificial Intelligence (**AAAI-19**)*, 2019

Shang-Yu Su, Kai-Ling Lo, **Yi-Ting Yeh**, and Yun-Nung Chen. Natural language generation by hierarchical decoding with linguistic patterns. In *Proceedings of The 16th Annual Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (**NAACL-HLT2018**)*, 2018

AWARDS AND HONORS

Formosa Grand Challenge, First Place *Mar. 2019*

- Formosa Grand Challenge is a national contest of speech recognition and natural language understanding hosted by Ministry of Science and Technology of Taiwan.
- Responsible for developing machine comprehension model.
- Collaborated with seven classmates and two professors.

Undergraduate Research Project Exhibition, Second Place *Jun. 2018*

- The paper *Natural language generation by hierarchical decoding with linguistic patterns* win the second place in undergraduate research project exhibition in NTU CSIE.

Undergraduate Research Project Exhibition, Appier Selected Prize *Jun. 2018*

- The project *VQA: Break the Barrier* received the selected prize by Appier Inc. .
- Experimented on the generalization ability of state of the art VQA model.
- Relational information of objects improves model performance on various VQA datasets.

RESEARCH EXPERIENCES

NTUCSIE Machine Intelligence and Understanding Lab (MiuLab) *Feb. 2017 - Present*
Undergraduate / Graduate Research Assistant
Advisor: Yun-Nung (Vivian) Chen

- **Question Answering** Proposed FlowDelta, which explicitly models the information gain in the dialog history, as an extension of FlowQA. Our FlowDelta shows significant improvement over FlowQA, and achieves state-of-the-art on QuAC dataset (Apr 24, 2019). Another work introduced QAInfomax as a regulazier to make question answering system more robust. QAInfomax improves system on AdversarialSQuAD dataset, while it do not hurt performance on vanilla SQuAD.
- **Language Generation:** Introduced a NLG model with a hierarchical decoder that leverages various linguistic patterns. The proposed method achieves 103.1%, 53.1%, 152.8%, and 41.4% improvement in BLEU, ROUGE-1, ROUGE-2, and ROUGE-L respectively with a smaller model than traditional sequence-to-sequence model.
- **Visual Question Answering:** Proposed a multiple-stage feature fusion mechanism for multi-modal dialogue modeling. Another work is about the generalization ability of the model architecture designed to solve VQA 2.0. We also observed relational information of objects in the image can improve model performance on various different VQA datasets.

WORKING EXPERIENCES

National Taiwan University *Sep. 2017 - Present*
Teaching Assistant

- [CSIE 5431] Applied Deep Learning (2017 Fall, 2019 Spring)
- [CommE 5054] Deep Learning for Human Language Processing (2018 Fall)
- [CSIE 7430] Advanced Deep Learning (2018 Spring)
- [CSIE 1310] Network Administration and System Administration Laboratory (2018 Spring)

National Taiwan University *Sep. 2017 - Jun. 2018*
Network Administrator

- Administrate network services in Dept. of Computer Science.
- Leader of DNS administration team
- Responsible for maintaining DNS services and virtual machines on VMware ESXi.

Yahoo! *Jul. 2018 - Sep. 2018*
Software Engineering Intern, DevOps team

- Analyze network traffic log of Yahoo! Auctions and design a system which can display trending words and product images customized to each user.
- Engaged in the improvement of Yahoo! search engine.
- Collaborate with data engineers in Search team.

Taiwan AI Labs *Jul. 2017 - Mar. 2018*
Software Engineer Intern

- Built an automatic news generation system which collect and analyze popular topics on web forum.
- Engaged in the development of Chatbot system.
- Join the Kaggle competition *Personalized Medicine: Redefining Cancer Treatment*, which required competitors to predict the effect of genetic mutation, with support of doctors from National Taiwan University Hospital.

Academia Sinica *Jul. 2016 - Aug. 2016*
Research Intern

- Research assistant of Dr. De-Nian Yang.
- Surveyed and reported papers about machine learning applications on social network.

SELECTED PROJECTS

When RL Meets Evolutionary Computation
Course project when taking Genetic Algorithm

- Extended and experimented on papers which combine reinforcement learning (RL) with evolutionary computation techniques.
- Modified M-K trap, a famous problem in genetic algorithm, into a RL environment and used it to test several state of the art RL models.

TVBOT
Course project when taking Intelligent Conversational Bot

- A task-oriented chatbot which can help people find their desired TV show series.
- TVBOT consists of neural network based natural language understanding, dialog policy learned from reinforcement learning, and ruled-based natural language generation.

GeeBikeLock
Project when attending Make NTU, a hackathon competition in Taipei, Taiwan

- An anti-theft IoT device which can be installed on a bike.
- Use GPS and accelerometer to detect if it is stolen.
- Equipped with RFID. Users can lock/unlock it with student ID card or by accessing the website.

PROFICIENT SKILLS

Languages: Mandarin Chinese(native); English(fluent); Japanese(fluent)
Programming & Tools:

- Deep Learning framework: Keras, TensorFlow, PyTorch
- Progrmming Language: Python, C, C++, Matlab, Shell script
- Virtual Machine: VMware ESXi, Docker
- Latex

Certifications & Tests: JLPT N1 (168/180), GRE (V: 152/170, Q: 170/170, A.W: 3.0)