YI-TING YEH

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EDUCATION

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

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

PUBLICATIONS

[1] **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.

[2] **Yi-Ting Yeh**, and Yun-Nung Chen. Flowdelta: Modeling flow information gain in reasoning for conversational machine comprehension. In *1th Workshop on NLP for ConvAI in the 57th Annual Meeting of the Association for Computational Linguistics (**ACL2019**) (Cross Submission)*, 2019.

[3] **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.

[4] 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 was a national contest of speech recognition and natural language understanding hosted by the Ministry of Science and Technology of Taiwan.
- Responsible for developing machine comprehension models.
- Collaborated with seven classmates and two professors in NTU.

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

- The paper *Natural language generation by hierarchical decoding with linguistic patterns* won the second place in undergraduate research project exhibition in department of computer science in NTU.

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

- The project *VQA: Break the Barrier* received the selected prize by Appier Inc. in undergrad research project exhibition in department of computer science in NTU.
- Experimented on the generalization ability of state-of-the-art VQA model.
- Showed relational information of objects improved model performance across different 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:** Introduced QAInfomax [1], which was based on mutual information maximization, as a regulazier to make question answering system more robust to adversarial generated examples. QAInfomax significantly improves model performance and achieves state-of-the-art performance on challenging AdversarialSQuAD dataset. Proposed FlowDelta [2], 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).
- **Multimodal Question Answering:** Proposed a multiple-stage feature fusion mechanism for multimodal dialogue modeling [3], and achieved 4th place in DSTC7 AVSD competition. 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 could improve model performance on various VQA datasets.
- **Language Generation:** Introduced an NLG model with a hierarchical decoder that leverages various linguistic patterns [4]. 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.

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

- Administrated network services in department of computer science in NTU.
- Leader of the DNS administration team, which was responsible for maintaining DNS services and virtual machines on VMware ESXi.

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

- Analyzed the network traffic log of Yahoo! Auctions to build a system that can automatically display customized trending words and product images to each user.
- Engaged in the improvement of Yahoo! search engine.
- Collaborated with data engineers, designers, and a project manager.

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

- Built an automatic news generation system which collected and analyzed popular topics on web forum.
- Engaged in the development of chatbot system, which focused on building socialbot that can chat engagingly with humans.
- Joined the Kaggle competition *Personalized Medicine: Redefining Cancer Treatment*, which required competitors to predict the effect of genetic mutation, with support from 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 combined reinforcement learning (RL) with evolutionary computation techniques.
- Modified M-K trap, a well-known benchmark problem in genetic algorithm, into an RL environment and used it to test the generalization ability of several state-of-the-art RL algorithms.

TVBOT
Course project when taking Intelligent Conversational Bot

- A task-oriented chatbot which could help people find their desired TV show series.
- TVBOT consisted of natural language understanding based on neural network, 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 could be installed on a bike.
- Used GPS and accelerometer to detect whether anyone stole a bike.
- Equipped with RFID, and users could lock/unlock it with student ID cards or by accessing our 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, GRE (V: 152/170, Q: 170/170, A.W: 3.0)