

Yun-Wei Chu

(+1)765-637-1352 \diamond chu198@purdue.edu \diamond yunwei-c.github.io

EDUCATION

- Purdue University** 2021 - Present
Ph.D. student in Electrical & Computer Engineering
- National Chiao Tung University** 2015 - 2017
M.S. in Electrical & Control Engineering
- National Chi Nan University** 2011 - 2015
B.S. in Electrical Engineering

RESEARCH EXPERIENCE

- Research Assistant. Purdue University** 2021 - Present
- Customized student models for online learners with different demographic variables; Employed federated learning to personalize prediction model for student subgroups and improved 10.8% AUC versus baseline model.
- Analyzed online learners' video-watching behavior to their in-video quiz performance; Designed a meta-learning-based training algorithm to guide the prediction model and reflect similarities within student behavioral clusters.
- Research Intern. Microsoft** 2022 Summer
- Collected a news dataset from Bing based on user intensively searched entity; Implemented BERT-based models and conducted quantitative analysis and human evaluation to motivate entity-centric headline generation task.
- Research Co-op. HP Labs** 2021 - 2022
- Mined, modeled, and visualized users' computer application usage behavior. Presented high-dimensional data in low dimensions to a user and provided machine learning methods to compare intents of different users.
- NLP Research Assistant. Academia Sinica** 2019 - 2021
- Researched in language generation in Visual Storytelling and proposed the first automatic evaluation metric that aligns human judgement for Visual Storytelling.
- Implemented Transformer Language Model with a human-like discriminator to refine and produce superior visual stories per both automatic and human evaluations. Introduced a Length-Controlled Transformer to generate prolong visual stories with better focus and detail
- Researched in multi-modal processing in Video Question Answering; Developed cross-modality attention network for dynamic scenes reasoning and improved 20.8% CIDEr score versus baseline model.

SELECTED PUBLICATIONS

- Mitigating Biases in Student Performance Prediction via Personalized Federated Learning.** Y.-W. Chu, S. Hosseinalipour, E. Tenorio, L. Cruz, K. Douglas, A. Lan, C. Brinton. *CIKM*, 2022. [\[Paper\]](#)
- Learning to Rank Visual Stories From Human Ranking Data.** Y.-W. Chu, C.-Y. Hsu, V. Chen, K.-C. Lo, C. Chen, T.-H. Huang and L.-W. Ku. *ACL-IJCNLP*, 2022. [\[Paper\]](#)
- Plot and Rework: Modeling Storylines for Visual Storytelling.** Y.-W. Chu, C.-Y. Hsu, T.-H. Huang and L.-W. Ku. *Findings of ACL-IJCNLP*, 2021. [\[Paper\]](#)
- Stretch-VST: Getting Flexible With Visual Stories.** Y.-W. Chu, C.-Y. Hsu, T.-L. Yang, T.-H. Huang and L.-W. Ku. *ACL-IJCNLP Demo*, 2021. [\[Paper\]](#)
- End-to-end Recurrent Cross-Modality Attention for Video Dialogue.** Y.-W. Chu, K.-Y. Lin, C.-C. Hsu, L.-W. Ku. *IEEE Transactions on Audio, Speech and Language Processing*, 2021. [\[Paper\]](#)

TECHNICAL SKILLS

- Language:** Python, C/C++, Matlab, L^AT_EX
- Machine Learning Toolkits:** PyTorch, Tensorflow, Scikit-learn, NLTK
- Machine Learning Techniques:** Natural Language Processing, Multi-modal Processing, Federated Learning