Tsu-Jui (Ray) Fu

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About Me

I am currently a 2nd-year Ph.D. student at UCSB CS, advised by William Wang. My research interest lies in natural language processing (NLP) and computer vision (CV). Primarily, I work on language grounding and interacting with environments using language. Besides, I am also interested in information extraction and video analysis. My goal is to bridge the gap between vision and language via the AI system.

Education

2019–now **Ph.D. at University of California, Santa Barbara**, *Computer Science*, CA, USA.
Advisor: William Yang Wang

2014–2018 **B.S. at National Tsing-Hua University**, *Computer Science*, Hsinchu, Taiwan.
Advisor: Shan-Hung Wu, Chun-Yi Lee, and Hwann-Tzong Chen

Experience

2019-now **UCSB NLP**, *Research Assistant*, CA, USA.
Advisor: William Yang Wang

Summer 2021 **Microsoft Azure AI**, *Research Intern*, WA, USA.
Advisor: Linjie Li and Zhe Gan

Summer 2020 **Microsoft Research**, *Research Intern*, WA, USA.
Advisor: Yale Song and Daniel McDuff

Summer 2019 **Preferred Networks**, *Research Intern*, Tokyo, Japan.
Advisor: Yuta Tsuboi and Jason Naradowsky

2017–2019 **Academia Sinica CKIP Lab**, *Research Assistant*, Taipei, Taiwan.
Advisor: Wei-Yun Ma

2017–2018 **NTHU ELSA Lab**, *Research Assistant*, Hsinchu, Taiwan.
Advisor: Chun-Yi Lee

2017–2018 **Umbo Computer Vision**, *Research Collaboration*, Taipei, Taiwan.
Advisor: Hwann-Tzong Chen

Summer 2017 **Academia Sinica CKIP Lab**, *Research Intern*, Taipei, Taiwan.
Advisor: Wei-Yun Ma

Publications

2021 **H-FND: Hierarchical False-Negative Denoising for Robust Distantly-Supervised Relation Extraction**.
Tsu-Jui Fu*, Jhih-Wei Chen*, Chen-Kang Lee, and Wei-Yun Ma
Annual Meeting of the Association for Computational Linguistics (**ACL**), 2021 (Findings)

2021 **Semi-Supervised Policy Initialization for Playing Games with Language Hints**.
Tsu-Jui Fu and William Yang Wang
North American Chapter of the Association for Computational Linguistics (**NAACL**), 2021 (Short)

2021 **L2C: Describing Visual Differences Needs Semantic Understanding of Individuals**.
An Yang, Xin Wang, **Tsu-Jui Fu**, and William Yang Wang
European Chapter of the Association for Computational Linguistics (**EACL**), 2021 (Short)

2021 **Multimodal Style Transfer Learning for Outdoor Vision-and-Language Navigation**.
Wanrong Zhu, Xin Wang, **Tsu-Jui Fu**, An Yan, Pradyumna Narayana, Kazoo Sone, Sugato Basu, and William Yang Wang
European Chapter of the Association for Computational Linguistics (**EACL**), 2021 (Long)

2020 **SSCR: Iterative Language-Based Image Editing via Self-Supervised Counterfactual Reasoning**.
Tsu-Jui Fu, Xin Eric Wang, Scott Grafton, Miguel Eckstein, and William Yang Wang
Conference on Empirical Methods in Natural Language Processing (**EMNLP**), 2020 (Long)

2020 **Counterfactual Vision-and-Language Navigation via Adversarial Path Sampler**.
Tsu-Jui Fu, Xin Eric Wang, Matthew Peterson, Scott Grafton, Miguel Eckstein, and William Yang Wang
European Conference on Computer Vision (**ECCV**), 2020 (**Spotlight**)

2020 **Why Attention? Analyzing and Remedying BiLSTM Deficiency in Modeling Cross-Context for NER**.
Peng-Hsuan Li, **Tsu-Jui Fu**, and Wei-Yun Ma
AAAI Conference on Artificial Intelligence (**AAAI**), 2020 (**Oral**)

2019 **A Distributed Scheme for Accelerating Semantic Video Segmentation on An Embedded Cluster**.
Tsu-Jui Fu*, Hsuan-Kung Yang*, Kuan-Wei Ho, Po-Han Chiang and Chun-Yi Lee
International Conference on Computer Design (**ICCD**), 2019 (**Oral**)

2019 **Adversarial Active Exploration for Inverse Dynamics Model Learning**.
Zhang-Wei Hong, **Tsu-Jui Fu**, Tzu-Yun Shann, Yi-Hsiang Chang, and Chun-Yi Lee
Conference on Robot Learning (**CoRL**), 2019 (**Oral**)

2019 **GraphRel: Modeling Text as Relational Graphs for Joint Entity and Relation Extraction**.
Tsu-Jui Fu, Peng-Hsuan Li, and Wei-Yun Ma
Annual Meeting of the Association for Computational Linguistics (**ACL**), 2019 (Long)

2019 **Attentive and Adversarial Learning for Video Summarization**.
Tsu-Jui Fu, Shao-Heng Tai, and Hwann-Tzong Chen
Winter Conference on Applications of Computer Vision (**WACV**), 2019 (**Oral**)

2018 **Region-Semantics Preserving Image Synthesis**.
Kang-Jun Liu, **Tsu-Jui Fu**, and Shan-Hung Wu
Asian Conference on Computer Vision (**ACCV**), 2018

2018 **Diversity-Driven Exploration Strategy for Deep Reinforcement Learning**.
Zhang-Wei Hong, Tzu-Yun Shann, Shih-Yang Su, Yi-Hsiang Chang, **Tsu-Jui Fu**, and Chun-Yi Lee
Conference on Neural Information Processing Systems (**NeurIPS**), 2018

2018 **Speed Reading: Learning to Read ForBackward via Shuttle**.
Tsu-Jui Fu and Wei-Yun Ma
Conference on Empirical Methods in Natural Language Processing (**EMNLP**), 2018 (Long)

2018 **Dynamic Video Segmentation Network**.
Yu-Syuan Xu, **Tsu-Jui Fu***, Hsuan-Kung Yang*, and Chun-Yi Lee
Conference on Computer Vision and Pattern Recognition (**CVPR**), 2018

2019 **Learning from Observation-Only Demonstration for Task-Oriented Language Grounding via Self-Examination**.
Tsu-Jui Fu, Yuta Tsuboi, Sosuke Kobayashi, and Yuta Kikuchi
Conference on Neural Information Processing Systems (**NeurIPS**), 2019 (ViGIL Workshop)

2018 **Visual Relationship Prediction via Label Clustering and Incorporation of Depth Information**.
Hsuan-Kung Yang, An-Chieh Cheng, Kuan-Wei Ho, **Tsu-Jui Fu**, and Chun-Yi Lee
European Conference on Computer Vision (**ECCV**), 2018 (PIC Workshop)

2021 **Language-Driven Image Style Transfer**.
Tsu-Jui Fu, Xin Eric Wang, and William Yang Wang

2021 **Language-based Video Editing via Multi-Modal Multi-Level Transformer**.
Tsu-Jui Fu, Xin Eric Wang, Scott Grafton, Miguel Eckstein, and William Yang Wang

2021 **DOC2PPT: Automatic Presentation Slides Generation from Scientific Documents**.
Tsu-Jui Fu, William Yang Wang, Daniel McDuff, and Yale Song

2018 **Dialogue-based Diverse Travel Itinerary Recommendation System via Path Sampling**.
Tsu-Jui Fu, Yu-Han Chen, Huan-Cheng Chang, and Wei-Yun Ma

Organizing

2021 **Workshop on Advances in Language and Vision Research (ALVR)**.
North American Chapter of the Association for Computational Linguistics (**NAACL**), 2021

Awards

Spring 2019 **Third Place**, *Formosa Grand Challenge*, Ministry of Science and Technology (**MOST**), Taiwan.

Summer 2018 **Second Place**, *Person In Context Challenge*, ECCV 2018.

Spring 2018 **Outstanding Students Conference Travel Grant**, Foundation For The Advancement of Outstanding Scholarship (**FAOS**), Taiwan.

Teaching

Summer 2018 **Teaching Assistant**, *Vision and Learning Summer School*, National Tsing-Hua University.

Spring 2018 **Teaching Assistant**, *Nvidia Deep Learning Workshop*, National Central University.

Fall 2017 **Teaching Assistant**, *CS565600 Deep Learning*, National Tsing-Hua University.

Fall 2017 **Teaching Assistant**, *CS210401 Hardware Design and Lab*, National Tsing-Hua University.