Wenda Xu

wendaxu@ucsb.edu

Education

University of California, Santa Barbara — Santa Barbara, CA
Ph.D., Computer Science: **3.9/4.0** — 9/2020–*present*
Advisor: William Yang Wang, Ph.D, LeiLi, Ph.D

University of California, Davis — Davis, CA
BS., Computer Science: **3.9/4.0** — 9/2016–3/2020
Senior Design Project—Visual SLAM using ORB-SLAM2 with Path Finding
Advisors: Chen-Nee Chuah, Ph.D.

Research Interests

Natural language processing: Text Generation Evaluation; Machine Translation; Constrained Text Generation; Self-Supervised learning; Text Style Transfer; Faithful text generation;

Publications & Preprints

1. **Wenda Xu**, Xian Qian, Mingxuan Wang, Lei Li, William Yang Wang, "SEScore2: Retrieval Augmented Pretraining for Text Generation Evaluation", https://arxiv.org/abs/2212.09305, on submission

2. **Wenda Xu**, Yilin Tuan, Yujie Lu, Michael Saxon, Lei Li, William Yang Wang, "Not All Errors are Equal: Learning Text Generation Metrics using Stratified Error Synthesis", https://arxiv.org/abs/2210.05035, EMNLP 2022, **SEScore: No.1 metric among all unsupervised metrics in WMT22 metrics shared task** (Huggingface link: https://huggingface.co/spaces/xu1998hz/sescore)

3. **Wenda Xu**, Michael Saxon, Misha Sra and William Yang Wang**, "**Self-Supervised Knowledge Assimilation for Expert-Layman Text Style Transfer", https://arxiv.org/abs/2110.02950, AAAI 2022

4. Michael Saxon, Xinyi Wang, **Wenda Xu**, William Yang Wang, "PECO: Examining Single Sentence Label Leakage in Natural Language Inference Datasets through Progressive Evaluation of Cluster Outliers", Preprint arXiv:2112.09237, On submission

5. Yujie Lu, Weixi Feng, Wanrong Zhu, **Wenda Xu**, Xin Eric Wang, Miguel Eckstein, William Yang Wang, "Neuro-Symbolic Causal Language Planning with Commonsense Prompting", Preprint arXiv: 2206.02928, On submission

6. Wanrong Zhu, An Yan, Yujie Lu, **Wenda Xu**, Xin Eric Wang, Miguel Eckstein, William Yang Wang, "Visualize Before You Write: Imagination-Guided Open-Ended Text Generation", Preprint arXiv: 2210.03765, On submission

7. Z Lai, R Guo, **W Xu**, Z Hu, K Mifflin, C DeCarli, B. Dugger, S. Cheung, and C-N. Chuah, "Automated Segmentation of Amyloid-β Stained Whole Slide Images of Brain Tissue", Preprint bioRxiv: 2020.11.13.381871

8. Z. Lai, K. Guo, **W. Xu**, Z. Hu, B. Dugger, S. Cheung, and C-N. Chuah, "Automated Grey and White Matter Segmentation in Digitized Ab Human Brain Tissue Slide Images", IEEE ICME 2020 Workshop, July 2020.

Research Experience

ByteDance (Tiktok) AI Lab — Mountain View, CA
Research Science Intern — *6/2022 - Oct/2022*
Mentors: Mingxuan Wang, Xian Qian. Used a retrieval augmented technique to synthesized hard negative samples to simulate text generation outputs. Developed a new severity measures to estimate the errors in each sample and produce pseudo labels; The learned metric (**SEScore2**) achieves top performance in Machine Translation, Speech Translation, data-to-text, dialogue generation [1].

UCSB NLP Lab *Santa Barbara, CA*

Research Assistant 2/2021–*present*

Mentors: William Yang Wang, Lei Li. Used a stratified error synthesis technique to build an unsupervised learned text generation evaluation metric (**SEScore**) through accuracy and fluency aspects, achieving promising performance in Machine Translation, data-to-text and image captioning [2]. Developed a novel unsupervised expert layman text style transfer system using Self-Supervised learning and KBA pretraining task, assimilating knowledge graph edges into a language model [3].

Professional Experience

Software Engineer Intern at LICAP *Sacramento, CA*

Software Engineering Team *7/2020 – 9/2020*

Mentor: Timothy Smith. Developed a segmentation model to detect capacitor boundary for 3D printer. Built a CNN-enhanced error detector on the capacitor manufacture lines. Agile development on front-end applications.

Skills

Software Proficiencies

Python (Pytorch, Tensorflow, Numpy, SciPy, Sklearn etc), C, C++, Linux, PHP, JavaScript (React), MySQL

Conceptual

Deep learning, Computer Vision, Natural Language Processing (NLP)

Selected Coursework

Probability; Matrix Analysis; Machine Learning; Algorithm and Data Structure; Machine Translation; Natural Language Processing; Computer Vision; Computer Graphics; Self-Driving; Combinatorics and Graph Theory.

Honors

UCSB, **The Robert Noyce Fellowship**	2022
UCSB, **Academic Excellence Fellowship**	2020
UC Davis, **Honor Graduation**	2020
UC Davis, **Thomas E. Bruzzone Scholarship**	2019
UC Davis, **Robert Murdoch Memorial Scholarship**	2019
UC Davis, **Best Senior Design of a year (Visual SLAM)**	2019
UC Davis, College of Engineering, **Dean's Honor list**	16-20

Last updated December 1, 2022