Juntong NI

Mail: juntongni02@gmail.com Homepage: juntongni.github.io

Education

Shandong University (SDU) **Sept. 2020 – Present**

B.Eng. in Artificial Intelligence *Qingdao, China*

- GPA: 4.21 / 5.0, Average Grade: 92.16 / 100, Ranking: 2 / 52
- Major Courses: Natural Language Processing (94), Deep learning (95), Linear Algebra (99), Machine Learning (93), Probability (98), Information Retrieval (100), Computer Vision (95), Practices on AI (95)

Publications

General Debiasing for Multimodal Sentiment Analysis.

*Teng Sun, **Juntong Ni**, Wenjie Wang, Liqiang Jing, Yichen Zheng, Liqiang Nie. ACM MM 2023*

EVER: Mitigating Hallucination in LLMs through Real-Time Verification and Rectification.

*Haoqiang Kang, **Juntong Ni**, Huaxiu Yao. arXiv:2311.09114*

FREE: The Foundational Semantic Recognition for Modeling Environmental Ecosystems.

*Shiyuan Luo, **Juntong Ni**, Shengyu Chen, Runlong Yu, Yiqun Xie, Huaxiu Yao, Xiaowei Jia. Under Review by WWW 2024*

Muti-modal Emotion Recognition via Hierarchical Knowledge Distillation.

*Teng Sun, Yinwei Wei, **Juntong Ni**, Zixin Liu, Xuemeng Song, Yaowei Wang, Liqiang Nie. Under Review by IEEE TMM*

Research Experiences

University of North Carolina at Chapel Hill **Oct. 2023 – Nov. 2023**

Research Intern, supervised by Prof. Huaxiu Yao *Chapel Hill, NC*

- Engaged in a project that focused on addressing the challenge of generating inaccurate or hallucinated content using LLms. We employ a real-time, stepwise generation and hallucination rectification strategy to detect and rectify hallucinations as they occur during the text generation process. This work has been submitted on arXiv.
- Initiated a second project leveraging LLMs to address geoscience challenges. Historically, predictions predominantly emphasized numerical relationships, often sidelining metadata's significance. Our innovative approach utilizes GPT-3.5 to craft prompts based on data and its associated metadata, subsequently employing BERT for refined predictions. This work is under review at WWW 2024.

University of California San Diego **June 2023 – Sept. 2023**

Summer Intern, supervised by Prof. Pengtao Xie *La Jolla, CA*

- Spearheaded a project aimed at predicting missing 3D coordinates within the SeqFISH sequence.
- Introduced a transformer-based model, complemented by a masked imputation task, to address the computational challenges of the prediction process.
- Incorporated a random masking technique for data augmentation, bolstering the model's ability to generalize across diverse datasets.
- Achieved exemplary results, with our model consistently outperforming benchmark solutions in accuracy and efficiency.
- Managed and directed all facets of the project, working under the direct guidance of a distinguished professor.

Shandong University **Dec. 2021 – May 2023**

Research Assistant, supervised by Prof. Liqiang Nie *Qingdao, China*

- Led an initiative to address inherent biases in Multimodal Sentiment Analysis (MSA). While prevalent MSA techniques capitalize on multimodal data, they often inadvertently align with spurious correlations between features and sentiment labels. In response, we pioneered a comprehensive debiasing task and crafted a robust framework utilizing Inverse Probability Weighting (IPW). Our empirical evaluations highlighted the framework's superior generalization capabilities. I played a pivotal role in manuscript composition and experimental design. This groundbreaking research has been accepted for presentation at ACM Multimedia 2023.
- Embarked on a project to rectify the overshadowing effect of dominant modalities, such as text, on the representation learning of auxiliary modalities like images and audio. We employed knowledge distillation as a strategic approach to harmonize the interplay between modalities. Rigorous validation on two benchmark datasets confirmed the efficacy of our model. My contributions were instrumental in experimental design and manuscript drafting. This innovative research is currently under review at IEEE Transaction on Multimedia.

Skills

Languages: Chinese (Native), English (TOEFL: 101)
Programming Languages: Python, C++, C, LaTeX, HTML/CSS, JavaScript, SQL
Developer Tools: Linux, GitHub, VS Code, Xcode, Google Colab, Jupter, Google Cloud Platform
Deep Learning Tools: Pytorch, Tensorflow

Awards and Honors

- Zhiyang Scholarship (10 awardees per year in department) **Winter 2022**
- First Class Scholarship (Top 5%) **Fall 2022**
- Honorable Mention in COMAP Mathematical Contest in Modeling (Top 10%) **Spring 2022**
- Second Prize in Asia and Pacific Mathematical Contest in Modeling (Top 10%) **Winter 2021**
- Third Prize in National University Mathematics Competition (Top 15%) **Winter 2021**

Professional Service

- Reviewer for International Conference on Learning Representations (ICLR) **2024**
- Reviewer for Neural Information Processing Systems (NeurIPS) **2023**
- Reviewer for ACM International Conference on Multimedia (ACM MM) **2023**

Extracurricular

- 42.195KM Finisher (Chengdu Marathon) **2023**
- 21.0975KM Finisher (Qingdao Marathon) **2023**
- University Badminton Men's Doubles Champions **2022**