Yindu Su

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Education

Zhejiang University **Sept. 2020 – Mar. 2023**
Master of Engineering in Computer Technology

Zhejiang University **Sept. 2016 – Aug. 2020**
Bachelor of Engineering in Energy & Environment Systems Engineering

Publications

- [**AAAI 2021**] Lin Sun, Jiquan Wang, Kai Zhang, **Yindu Su** and Fangsheng Weng. "RpBERT: A Text-Image Relation Propagation-based BERT Model for Multimodal NER." *AAAI Conference on Artificial Intelligence.*
- [**COLING 2020**] Lin Sun, Jiquan Wang, **Yindu Su**, et al. "RIVA: A Pre-trained Tweet Multimodal Model Based on Text-Image Relation for Multimodal NER." *International Conference on Computational Linguistics.*
- [**ICASSP 2021**] Jian Xie, Kai Zhang, Lin Sun, **Yindu Su** and Chenxiang Xu. "Improving NER in Social Media via Entity Type-Compatible Unknown Word Substitution." *International Conference on Acoustics, Speech and Signal Processing*

Industrial Experience

Alibaba **Apr. 2023 – present**
Algorithm Engineer, NLP (**Top Performer**)

- Designed an attribute value extraction method using a dual-encoder architecture trained with contrastive loss.
- Led the end-to-end development process, including dataset annotation, model optimization, and service deployment.
- Deployed the model in production, resulting in a significant 1.5% increase in commodity sales rate and better useablity.

ByteDance **June 2022 – Aug. 2022**
Software Engineer Intern

- Developed an automated service for data verification and recovery, reducing the need for manual maintenance.

Research Experience

Multimodal Named Entity Recognition Based on Text-Image Relation

- Addressed and mitigated the negative impact of irrelevant images on multimodal named entity recognition.
- Introduced RpBERT which integrate gate module into BERT to regulate the intensity of visual cues.
- Achieved an improvement of 1.8%/1.2% F1 score on Twitter 2015 and Twitter 2017 dataset, respectively.

Improving Tweet Named Entity Recognition via Out-of-Vocabulary Words Substitution

- Innovated solutions to integrate out-of-vocabulary words commonly found in social media's informal language.
- Presented a novel word substitution method based on deep metric learning and k-nearest neighbors.
- Enhanced BERT-CRF by 3.0% F1 score on the tweet named entity recognition dataset W-NUT 2017.

Unsupervised Pre-training for Image-Text Relation Classification

- Identified that controversial labels in image-text relation datasets hinder the enhancement of supervised learning.
- Developed an unsupervised approach that generates pseudo-labels by clustering and uses them as supervision.
- Obtained state-of-the-art performance under various settings, e.g. linear probe, fine-tuning, and zero-shot.

Awards/Honors

- Excellent Postgraduate Students' Award
- Graduate of Merit / Triple A Graduate
- Guorui Scholarship

Skills

- **Languages**: Python, SQL, Java
- **Frameworks**: PyTorch, Transformers, scikit-learn