XIAO SONG

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INTEREST

Computer Vision, Natural Language Processing, Causality, and Biomedicine.

WORK EXPERIENCE

Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences **Jul 2023 - present**
Research Assistant
PI: A.R.&A.P. Ruxin Wang

EDUCATIONS

Beijing University of Technology **Sep 2020 - Jun 2023**
M.S. in Computer Science and Technology
Advised by: A.P. Xiaodan Zhang

University of Jinan **Sep 2016 - Jun 2020**
B.S. in Computer Science and Technology
Advised by: A.P. Lixin Du

HONORS & REWARDS

1. Excellent Master's Thesis (3 A grades given by anonymous reviewers), Beijing University of Technology, 2023.
2. Outstanding Graduates, Beijing University of Technology, 2023.
3. Postgraduate Science and Technology Innovation Award (First Prize), Beijing University of Technology, 2023.
4. Academic Excellence Scholarship (Second-Class, Top 10%), Beijing University of Technology, 2020-2021.
5. Outstanding Graduates, University of Jinan, 2020.
6. Mathematics Competition of Chinese College Students (First Prize), 2019.

PUBLICATIONS

1. **Xiao Song**, Jiafan Liu, Yun Li, Wenbin Lei, Ruxin Wang (2023). Rethinking Radiology Report Generation via Causal Reasoning and Counterfactual Augmentation. In *arXiv*. (Preprint, submitted to CVPR 2024)

2. **Xiao Song**, Xiaodan Zhang, Junzhong Ji, Ying Liu (2023). Multi-scale Superpixel based Hierarchical Attention Model for Brain CT Classification. In *Journal of Visual Communication and Image Representation (JVCIR)*, 91, 103773.

3. **Xiao Song**, Xiaodan Zhang, Junzhong Ji, Ying Liu, Pengxu Wei (2022). Cross-modal Contrastive Attention Model for Medical Report Generation. In *The 29th International Conference on Computational Linguistics (COLING)*, (pp. 2388-2397). (Oral)

4. Junzhong Ji, Menglong Zhang, **Xiao Song**, Xiaodan Zhang (2022). Multi-scale Superpixel based Fusion Network for Brain CT Classification. In *China Sciencepaper*. 17(11):1173-1180.

PATENTS

1. **宋晓(Xiao Song)**，王如心. 基于反事实数据增强的放射学报告生成方法. CN202311704996.X
2. 张晓丹，**宋晓(Xiao Song)**，冀俊忠. 一种基于跨模态对比注意力机制的医学报告自动生成方法. CN202210563429.6

RESEARCH EXPERIENCE

RA, Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences **Jul 2023 - present**

PI: Ruxin Wang

1. CV, NLP and their Combinations with Biomedicine and Causality.

One first-author manuscript "Rethinking Radiology Report Generation via Causal Reasoning and Counterfactual Augmentation" was submitted to CVPR 2024.

Postgraduate, Beijing University of Technology. **Sep 2020 - Jun 2023**

Advisor: Xiaodan Zhang

1. Masteral Thesis "Research on Cross-modal Attention Mechanism based Medical Report Generation Task" where 3 A grades were given by anonymous reviewers was awarded as Excellent Master's Thesis.
2. Multi-scale Superpixel based Hierarchical Attention Model for Brain CT Classification: using superpixel to plot the lesion regions, extracting the appearance information and geometric information, and fusing multi-scale information from coarse to fine with a hierarchical attention structure. (First author, published by JVCIR 2023.)
3. Cross-modal Contrastive Attention Model for Medical Report Generation: mining the potential visual and semantic information from the historical cases for assisting medical report generation. (First author, published by COLING 2022 Oral)
4. Multi-scale Superpixel based Fusion Network for Brain CT Classification. (Third author, published by China Sciencepaper.)
5. A Method for Automatic Medical Report Generation based on Cross-modal Contrastive Attention Mechanism. (Second Author, Chinese patent)

Undergraduate, University of Jinan. **Sep 2016 - Jun 2020**

Advisor: Lixin Du

1. A class roll call system based on face recognition. (Shandong University Student Artificial Intelligence Competition, Second-Prize, Fourth Place)
2. A portal game based on Unity. (Shandong University Student Software Design Competition, Second-Prize)

ACADEMIC CONFERENCE

1. The 5th BAAI Conference. Beijing, China. June 9-10, 2023.
2. The 29th International Conference on Computational Linguistics. Gyeongju, Korea. October 12-17, 2022. Oral presentation.
3. China Multimedia 2022. Guiyang, China. July 20-22, 2022. Poster presentation.

SKILLS

Programing: Python, C++, C, PHP, HTML, Java, SQL.

Deep Learning Frameworks: Pytorch.

Others: manager of the research group's Linux deep learning computer servers.