Xiao Song

CONTACT INFORMATION

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RESEARCH INTERESTS

Combination of Causality, Computer Vision, Natural Language Processing and Biomedicine, including Medical Report Generation, Image Captioning, Image Classification.

EDUCATION

Beijing University of Technology (211project), Beijing, China. **September 2020 – June 2023**

- M.Eng, in Computer Science and Technology, GPA: 3.85/4.
- Advisor: Xiaodan Zhang

University of Jinan, Jinan, Shandong, China. **September 2016 – June 2020**

- B.Eng, in Computer Science and Technology, GPA: 3.38/4.
- Advisor: Lixin Du

PUBLICATIONS

- **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 of Image Representation (JVCIR)*, 91(2):103773.
- **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.
- 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

- 张晓丹(Xiaodan Zhang), **宋晓(Xiao Song)**, 冀俊忠(Junzhong Ji). 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(A Method for Automatic Medical Report Generation based on Cross-modal Contrastive Attention Mechanism). (CN202210563429.6, second trial)

HONORS AND AWARDS

- Excellent Master's Thesis, Beijing University of Technology, 2023.
- Outstanding Graduates, Beijing University of Technology, 2023.
- Postgraduate Science and Technology Innovation Award (First Prize), Beijing University of Technology, 2023
- Academic Excellence Scholarship (Second-Class, Top 10%), Beijing University of Technology, 2020-2021.
- Outstanding Graduates, University of Jinan, 2020.
- Mathematics Competition of Chinese College Students (First Prize), 2019.

RESEARCH EXPERIENCE

RA, Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences
PI: Ruxin Wang **July 2023 – present**

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

Postgraduate, Beijing University of Technology. **September 2020 – June 2023**
Advisor: Xiaodan Zhang

- Multi-scale Superpixel based Hierarchical Attention Model for Brain CT Classification: using superpixel to plot the lesion regions, extracting the appearance information and semantic information, and fusing multi-scale information from coarse to fine with a hierarchical structure. (accepted by *JVCIR* 2023.)
- 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. (accepted by *COLING* 2022 Oral)
- Multi-scale Superpixel based Fusion Network for Brain CT Classification. (accepted by *China Sciencepaper.*)
- A Method for Automatic Medical Report Generation based on Cross-modal Contrastive Attention Mechanism. (patent, in second trialing)

Undergraduate, University of Jinan. **September 2016 – June 2020**
Advisor: Lixin Du

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

ACADEMIC CONFERENCE

- The 5th BAAI Conference, Beijing, China, June 9-10, 2023.
- The 29th International Conference on Computational Linguistics (COLING), October 12-17, 2022, Remote, Oral presentation.
- China Multimedia 2022, Guiyang, China, July 20-22, 2022. Poster presentation.

TEACHING EXPERIENCE

Advising the Undergraduate Thesis "基于检索的医学报告自动生成方法研究(Research on Retrieval-based Medical Report Automatic Generation)", Beijing University of Technology, 2022.

SKILLS

Language: CET-6, IELTS 6.
Programing: Python, C++, C, PHP, HTML, Java, SQL.
Deep Learning Frameworks: Pytorch.
Others: manager of the research group’s Linux deep learning servers.