Xiao Song

CONTACT INFORMATION

E-mail: x.song@siat.ac.cn
Telephone: +86 18810779353
Address: Shenzhen, Guangdong, China, 518055
Homepage: http://www.matthewsung.xyz/

RESEARCH INTERESTS

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

EDUCATION

Beijing University of Technology (211project), Beijing, China. **Sep 2020 – Jun 2023**

- M.Eng, in Computer Science and Technology, GPA: 89.27/100.
- Advisor: Xiaodan Zhang

University of Jinan, Jinan, Shandong, China. **Sep 2016 – Jun 2020**

- B.Eng, in Computer Science and Technology, GPA: 3.91/5 (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 (3 A grades given by anonymous reviewers), 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 **Jul 2023 – present**

- 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

- 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. (published 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. (published by *COLING* 2022 Oral)
- Multi-scale Superpixel based Fusion Network for Brain CT Classification. (published 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. **Sep 2016 – Jun 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

Programing: Python, C++, C, PHP, HTML, Java, SQL.
Deep Learning Frameworks: Pytorch.
Others: manager of the research group's Linux deep learning computer servers.