Xin Hong

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Research Interests

My research interests include visual reasoning, multimodal learning, and image inpainting. Recently, I am also interested in solving biology problems with machine learning, such as protein structure prediction.

Education

University of Chinese Academy of Sciences *2016 - 2023*
Ph.D. student in Institute of Computing Technology, Chinese Academy of Sciences
Advisors: Prof. Hong Hu & Prof. Zhongzhi Shi & Prof. Yanyan Lan

Beijing University of Technology *2012 - 2016*
Undergraduate student in School of Software Engineering

Work Experience

Institute for AI Industry Research (AIR), Tsinghua University *June 2021 - present*
Research Intern
Advisor: Prof. Yanyan Lan

- **AIRFold:** ranked first in the CAMEO 3D structure prediction challenge for 4 weeks (2022.07.23-2022.08.20).
- Protein Language Model for Multiple Sequence Alignment Generation.

Beijing Academy of Artificial Intelligence (BAAI) *October 2020 - July 2021*
Research Intern

- **WenLan:** a Chinese version large scale vision and language pretrained model.
- Zhiyanpianyu: a one-say and one-guess game based on WenLan.

Megvii Research *June 2018 - March 2019*
Research Intern
Advisors: Pengfei Xiong & Haoqiang Fan

- image inpainting, 3D album, annotation tool for human segmentation based on superpixel.

IBM China System and Technology Development Center *October - December, 2015*
Development Intern

Mafengwo *August - October, 2015*
Front-end Development Intern

Publications

Preprint

4. **Visual Transformation Telling.**
   Xin Hong, Yanyan Lan, Liang Pang, Jiafeng Guo, Xueqi Cheng.
   under review, 2022.

3. **Visual Reasoning: from State to Transformation.**
   Xin Hong, Yanyan Lan, Liang Pang, Jiafeng Guo, Xueqi Cheng.
   under review, 2022.

2. **WenLan: Bridging Vision and Language by Large-Scale Multi-Modal Pre-Training**.
   Yuqi Huo, Manli Zhang, Guangzhen Liu, Haoyu Lu, Yizhao Gao, Guoxing Yang, Jingyuan Wen, Heng Zhang, Baogui Xu, Weihao Zheng, Zongzheng Xi, Yueqian Yang, Anwen Hu, Jinming Zhao, Ruichen Li, Yida Zhao, Liang Zhang, Yuqing Song, **Xin Hong**, Wanqing Cui, Danyang Hou, Yingyan Li, Junyi Li, Peiyu Liu, Zheng Gong, Chuhao Jin, Yuchong Sun, Shizhe Chen, Zhiwu Lu, Zhicheng Dou, Qin Jin, Yanyan Lan, Wayne Xin Zhao, Ruihua Song, Ji-Rong Wen.
   Technical Report, 2021.

1. **Robust reinforcement learning with Wasserstein constraint**
   Linfang Hou, Liang Pang, **Xin Hong**, Yanyan Lan, Zhiming Ma, Dawei Yin
   arXiv, 2020.

Conference Publications

4. **Transformation Driven Visual Reasoning.**
   Xin Hong, Yanyan Lan, Liang Pang, Jiafeng Guo, Xueqi Cheng.
   2021 IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2021.

3. **Deep Fusion Network for Image Completion**
   Xin Hong, Pengfei Xiong, Renhe Ji, Haoqiang Fan.
   Proceedings of the 27th ACM International Conference on Multimedia (ACMMM), 2019.
   Stats as of October 2022: ★ 204.

2. **Attention-driven Factor Model for Explainable Personalized Recommendation**
   Jingwu Chen, Fuzhen Zhuang, **Xin Hong**, Xiang Ao, Xing Xie, Qing He.
   The 41st International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR), 2018.

1. **Forward Learning Convolutional Neural Network**
   Hong Hu, **Xin Hong**, Dan Yang Hou, Zhongzhi Shi.
   10th International Conference on Intelligent Information Processing (IIP), 2018.

Selected Awards and Honors

- The 1st Place of *Fake News Detection on the Internet during the COVID-19, Big Data Charity Challenge*, 2020.
- Excellent Student Cadre, 2017.
- IBM Student Innovation Lab Program Award, 2014.
- Second Prize of Beijing Transportation Technology Competition, 2013.
- National Encouragement Scholarship, 2013.

Professional Responsibilities

- **Reviewing:** CVPR, ICCV, ECCV, AAAI, IJCV, JSTSP, Neural Computing and Applications.
- **Teaching:**
  - Principles of Artificial Intelligence, Teaching Assistant, 2018.
  - Principles of Artificial Intelligence, Teaching Assistant, 2017.

Skill

- **Programming Languages:** Python, HTML, CSS, Javascript, Java, C++, C#.
- **Tools:** Docker, Vim, Git; PyTorch, FAISS; Vue.js, TailwindCSS, Flask; Illustrator, Photoshop.