Mingxiao Li

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Education

KU Leuven — Leuven, Belgium
Ph.D. in Computer Science — *Sept.2019 - present*
- Advisor: Prof. Marie-Francine Moens
- Research Interests: Vision-Language, Generative Models, Large Vision-Language Model

KU Leuven — Leuven, Belgium
Master of Artificial Intelligence — *Sept.2018 - Sept.2019*

KU Leuven — Leuven, Belgium
Master of Quantum Chemistry and Computational Modeling — *Sept.2016 - Jun.2018*

East China University of Science and Technology — Shanghai, China
Bachelor of Material Physics — *Sept.2011 - Jun.2015*
- *Academic scholarship*: Academic year 2011-2012, 2012-2013, 2013-2014,2014-2015
- *Honors Graduate*: (Top 5% students in Department of Material)

Research Interest

Vision-Language Models are critical for constructing AI systems that can communicate with humans. My previous research focused on knowledge-based visual question answering and visual dialogue. Additionally, I have explored the use of vision-language models in embodied AI, where we leverage text-to-image models to assist agents in decision-making. (This work is recognized as AAAI oral presentation)

Visual Generative Models are crucial components in the development of AGI. My prior research focus on advancing the sampling algorithm of diffusion model through shifting time steps, and on designing controllable video generation with diffusion model, which involved animating images in accordance with customized object motions to align with user expectations.

LLM & MLLM are crucial for developing general AI systems. Beyond image processing, enabling LLMs to understand videos is also important. I recently initiated a project aimed at enhancing LLMs with the capability to comprehend extended videos.

Selected Publication

- **Mingxiao Li***, Bo Wan*, Marie-Francine Moens & Tinne Tuytelaars. Animate Your Motion: Turning Still Images into Dynamic Videos. *European Conference on Computer Vision (ECCV 2024)* .[Paper] [Code]
- **Mingxiao Li***, Tingyu Qu*, Ruicong Yao, Wei Sun, & Marie-Francine Moens. Alleviating Exposure Bias in Diffusion Models through Sampling with Shifted Time Steps. *International Conference on Learning Representations (ICLR 2024).* [Paper] [Code (DDPM ver.)][Code (ADM ver.)]
- Mang Ning, **Mingxiao Li**, Jianlin Su, Albert Ali Salah & Itir Onal Ertugrul. Elucidating the Exposure Bias in Diffusion Models. *International Conference on Learning Representations (ICLR 2024).* [Paper] [Code]
- Jingyuan Sun*, **Mingxiao Li***, Zijiao Chen, Yunhan Zhang, Shaonan Wang, & Marie-Francine Moens. Contrast, Attend and Diffuse to Decode High-Resolution Images from Brain Activities. *Advances on Neural Information Processing Systems. (NeurIPS 2023).* [Paper] [Code]
- **Mingxiao Li***, Zehao Wang*, Tinne Tuytelaars, & Marie-Francine Moens. Layout-Aware Dreamer for Embodied Visual Referring Expression Grounding. *Proceeding of the AAAI Conference on Artificial Intelligence (AAAI 2023)* **(Oral Presentation)**. [Paper] [Code]
- **Mingxiao Li**, Marie-Francine Moens. Dynamic Key-value Memory Enhanced Multi-step Graph Reasoning for Knowledge-based Visual Question Answering. *Proceeding of the AAAI Conference on Artificial Intelligence (AAAI 2022).* [Paper][Code]
- **Mingxiao Li**, Marie-Francine Moens. Modeling Coreference Relations in Visual Dialog. *The 16th Conference of the European Chapter of the Association for Computational Linguistics (EACL 2021).* [Paper][Code]

Preprint

- Jingyuan Sun*, **Mingxiao Li***, Zijiao Chen, & Marie-Francine Moens. NeuroCine: Decoding Vivid Video Sequences from Human Brain Activties.[Paper]

* denotes equal contribution

Award

European Union Erasmus Mundus Full Scholarship. (2016-2018)

Chinese Government Scholarship for Outstanding Undergraduate Students. (2015)

Service

Reviewer: NeurIPS, ACL, AAAI, EACL, ECML,

Workshop Organizer: AAAI-2024 Workshop: Artificial Intelligence for Brain Encoding and Decoding (AIBED)

Skills

Programming Languages: Python (Mainly use PyTorch for research), JAVA, MATLAB
Languages: Mandarin (Native), English (Full proficiency)

Reference

Prof. Marie-Francine Moens (sien.moens@kuleuven.be), full professor, Department of Computer Science, KU Leuven
Prof. Tinne Tuytelaars (tinne.tuytelaars@kuleuven.be), full professor, Department of Electrical Engineering, KU Leuven