Delin Chen

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Education

Wuhan University **Wuhan, China**

Computer Science and Technology B.S. GPA: 3.93/4.00 2020–2024

Coursework: Data Structures 93, Linear Algebra 92, Artificial Intelligence 96, Discrete Math 93, Statistics/Probability 95, Computer Vision 93, Computer Graphics 100, Machine Learning and Pattern Recognition 96

Publication (∗ = equal contribution)

Compositional VLM: Composing Visual Entities and Relationships in Large Language Models Via Communicative Decoding. [Preprint]

Junyan Li, **Delin Chen**, Yining Hong, Zhenfang Chen, Peihao Chen, Yikang Shen, Chuang Gan. 2023

Scratch Each Other's Back: Incomplete Multi-modal Brain Tumor Segmentation Via Category Aware Group Self-Support Learning. [ICCV]

Yansheng Qiu∗, **Delin Chen**∗, Hongdou Yao, Yongchao Xu, Zheng Wang. 2023

Modal-aware Visual Prompting for Incomplete Multi-modal Brain Tumor Segmentation. [ACM-MM]

Yansheng Qiu, Ziyuan Zhao, Hongdou Yao, **Delin Chen**, Zheng Wang. 2023

Query Re-Training for Modality-Gnostic Incomplete Multi-modal Brain Tumor Segmentation. [MICCAI workshop]

Delin Chen, Yansheng Qiu, Zheng Wang. 2023

TransRef: Multi-Scale Reference Embedding Transformer for Reference-Guided Image Inpainting. [Preprint]

Liang Liao∗, Taorong Liu∗, **Delin Chen**, Jing Xiao, Zheng Wang, Chia-Wen Lin, Shin'ichi Satoh. 2023

Reasearch Experience

MIT-IBM AI Lab & UMass Amherst *Research Intern* Apr 2023–Present

Topics: Large multimodal model, compositional VLM, visual grounding Advisor: *Chuang Gan*

- Proposed Compositional VLM, which guides the LLM to explicitly compose visual entities and relationships within text and dynamically communicates with the detection network to achieve vision-language communicative decoding.

Wuhan University- WuYu Lab *Reasearch Assiant* Oct 2023–Present

Topics: Intention-oriented reasoning, visual grounding Advisor: *Yu Wu*

- Proposed the integration of decomposed visual cues into Large Language Models as a novel approach to augmenting their reasoning abilities in complex tasks.

Wuhan University- AI& Multimedia Lab *Reasearch Assiant* May 2022–Mar 2023

Topics: Medical image analysis, incomplete multimodal learning Advisor: *Zheng Wang*

- Proposed to explore self-distillation across different modalities to address the issue of insufficient interaction between modalities and utilize the dominating characteristics of several modalities to guide the distillation of mutual knowledge.
- Proposed a transformer-based end-to-end model that used just one auto-encoder to provide interactive computations in any modality missing condition.
- Utilized embeddings as the prompts generated by a modality state classifier that focuses on the missing modality states to facilitate intra/inter-modal adaptation.

Wuhan University- AI& Multimedia Lab *Reasearch Assiant* Sep 2021–May 2022

Topics: Reference-based image inpainting Advisor: *Zheng Wang*

- Investigated the concept of reference-guided image inpainting as a means of completing complex scenes with insufficient information
- Proposed a transformer-based network with a multi-scale reference embedding procedure to address issues in image alignment and content restoration in situations with large missing regions.

Skills

Python, Pytorch, mmcv, Latex, Git/Terminal, VSCode/IntelliJ, Data Analysis/Visualization

Awards

Leijun Undergraduate Computer Science Scholarship	Oct 2023
Wuhan University Excellent Student Award	Sept 2023
CCF (China Computer Federation) Elite Collegiate Award (102 Students Nationwide)	Aug 2023
A-Class Academic Excellence Scholarship (top 5% in WHU)	Sept 2023
B-Class Academic Excellence Scholarship	Sept 2021,2022