Qian Yang

✉ qianyang.nlp.cs@gmail.com   ⌂ Google Scholar   ⌥ GitHub

🎓 EDUCATION

Mila - Quebec AI Institute & Université de Montréal   2023.09 – Present
Ph.D. in Computer Science

- Research topics: Multi-modal Learning, Explainable deep learning
- Supervisor: Prof. Aishwarya Agrawal
- CGPA: 4.3/4.3

Harbin Institute of Technology, Shenzhen   2020.09 – 2023.03
MSc in Computer Science and Technology

- Research topics: Multi-modal Learning, Explainable Question Answering
- Supervisor: Prof. Baotian Hu
- Thesis: Fine-grained Alignment for Explainable Multi-modal Inference

University of Electronic Science and Technology of China   2016.09 – 2020.06
BEng in Computer Science and Technology

- CGPA: 3.73/4.0 (top 10%)
- Thesis: Event Extraction based Text Summarization

🏛 PUBLICATIONS

- **Qian Yang**, Qian Chen, Wen Wang, Baotian Hu, and Min Zhang. Enhancing Multi-modal and Multi-hop Question Answering via Structured Knowledge and Unified Retrieval-Generation. *In Proceedings of the 31st ACM International Conference on Multimedia*, pages 5223-5234, 2023.
- **Qian Yang**, Yunxin Li, Baotian Hu, Lin Ma, Yuxin Ding, and Min Zhang. Chunk-aware Alignment and Lexical Constraint for Visual Entailment with Natural Language Explanations. *In Proceedings of the 30th ACM International Conference on Multimedia*, pages 3587-3597, 2022.
- Yunxin Li, **Qian Yang**, Qingcai Chen, Baotian Hu, Xiaolong Wang, Yuxing Ding, Lin Ma. Fast and Robust Online Handwritten Chinese Character Recognition with Deep Spatial & Contextual Information Fusion Network. *IEEE Transactions on Multimedia*, vol. 25, pp. 2140-2152, 2022.
- Baotian Hu, **Qian Yang**, Yunxin Li, Qingcai Chen. Method, Device, Terminal and Storage Medium for Stroke-level Sequential Handwritten Characters Recognition. *Chinese Invention Patent*, CN114612911A, 2022.

💼 ACADEMIC INTERNSHIPS

Enhancing Multi-modal Multi-hop QA with Structured Knowledge   2022.05 – 2022.10
Research Intern, Advisor: Dr. Wen Wang, Dr. Qian Chen   *Alibaba DAMO Academy, Hangzhou, China*

- Designed an entity-centered fusion model that align cross-modal information via structured knowledge to facilitate connections between sources from different modalities.

- Designed a unified retrieval-generation method to integrate intermediate retrieval results for answer generation.
- Published a paper at *ACM Multimedia 2023.*

📘 ACADEMIC PROJECTS

VLMs Reliability Measurement via Decomposition-based Consistency   2023.12 – Present
Ph.D student, Advisor: Prof. Aishwarya Agrawal   *Mila - Quebec AI Institute, Canada*

- Designed a task-agnostic approach to evaluate VLMs by comparing direct and decomposed sub-answer consistencies, effectively mitigating overconfidence and self-confirmation bias.
- Found that VLM calibration correlates with their capabilities, with weaker models benefiting from external agent support and stronger models experiencing less confirmation bias.
- Submitted a paper to *EMNLP 2024.*

Chunk-aware Alignment and Lexical Constraint for Explainable VQA   2021.08 – 2022.04
Research Assistant, Advisor: Prof. Baotian Hu   *Harbin Institute of Technology, Shenzhen, China*

- Designed a cross-modal fusion model that builds semantic alignment between text chunks and visual contents to alleviate semantic ambiguity in multi-modal inference.
- Designed constrained generation methods to incorporate the keywords during inference into explanation generation, improving the faithfulness of generated explanations.
- Published a paper at *ACM Multimedia 2022.*

Spatial-Contextual Information Fusion for Handwritten Characters Recognition 2020.12 – 2021.07
Research Assistant, Advisor: Prof. Baotian Hu   *Harbin Institute of Technology, Shenzhen, China*

- Designed an online handwritten Chinese characters recognition model that fuses stroke features with contextual information.
- Developed training methods to simulate typical usage scenarios, improving the model's ability to recognize incomplete characters and increasing its robustness.
- Published a paper at *Transactions on Multimedia 2022* and obtained a *Chinese Invention Patent.*

🏆 AWARDS AND SCHOLARSHIPS

The Second Prize Scholarship, HIT, Shenzhen (7,000 RMB)	2021 – 2022
National Encouragement Scholarship (Top 10%, 5,000 RMB)	2019
The First Prize Scholarship, UESTC (Top 20%, 1,000 RMB)	2016 – 2020

⚙️ TECHNICAL SKILLS

- Programming Languages: Python, C/C++, MATLAB, SQL
- Deep Learning Frameworks: PyTorch, TensorFlow
- Natural Languages: Mandarin (native), English (TOEFL: 99/120, R:26, L:25, S:22, W:26)

✍️ ACADEMIC SERVICE

Reviewer of ECCV 2024, CVPR 2024, ACM Multimedia 2024, ACM Multimedia 2023, COLING 2022

👥 TEACHING ROLES

Teaching Assistant, Harbin Institute of Technology, Shenzhen　　　　　　2020.09 − 2021.07

- Algorithms (Autumn 2020), Mathematical Logic (Spring 2021)