Ziming Luo

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Ann Arbor, MI, United States

Objective

My research objective is to develop novel methodologies for large language model-based systems that enable explainable and faithful reasoning across multiple modalities. I aim to design intelligent agents that not only excel in processing and integrating diverse data modality, but also align closely with human values.

Education

- **University of Michigan** — Ann Arbor, USA
  MSc in Electrical and Computer Engineering — *Aug 2023 - Present*
  - GPA: 3.99
  - Coursework: Natural Language Processing (A+), Foundation of Computer Vision (A+), Advanced Topics in Computer Vision (A), Large Language Model (A), Machine Learning (A), Probability and Random Process (A+), Matrix Methods for Signal Processing, Data Analysis and Machine Learning, Reinforcement Learning.
- **Shenzhen University** — Shenzhen, China
  *BSc in Information and Computational Science (**Honours degree**)* — *Sept 2019 - July 2023*
  BEng in Computer Science and Technology — *Sept 2019 - July 2023*
  - GPA: 3.88
  - Selected Coursework: Overview of Artificial Intelligence (A+, 93/100), Preliminary Machine Learning (A+, 93/100), Practice and Application of Deep Learning (A+, 97/100), Numerical Analysis(A+, 94/100), Mathematical methods for image processing (A+, 94/100), Computer Vision (A, 91/100)

Experience

- **University of Michigan** — Ann Arbor, USA
  Graduate Researcher | Supervisor: Dr. Vineet Kamat — *May 2024 - Present*
  - Develop location-aware and semantic-aware methods for 3D Referring Expression Segmentation.
  - Proposed an end-to-end, point cloud-based 3D scene graph pipeline for robot navigation that eliminates the need for well-aligned, posed images. This hierarchical framework integrates room and object detection/segmentation with open-vocabulary classification.
- **University of Texas at Dallas** — Remote
  Graduate Researcher | Supervisor: Dr. Xinya Du — *May 2024 - Dec 2024*
  - Developed verifiers that enable LLMs to perform factual and faithful reasoning.
  - Investigated RL-finetuning of LLMs, such as DeepSeep R1, to enhance their reasoning capabilities and efficiency.
  - Conducted a comprehensive survey on the application of LLMs in scientific research, identifying four key stages: hypothesis generation, experimental planning and implementation, paper writing, and peer review.

Publications

C=Conference, J=Journal, P=Patent, S=In Submission

* Denotes co-first authors

[S.1] **Luo Z.***, Yang Z.*, Xu Z., Yang Z., Du X. **LLM4SR: A Survey on Large Language Models for Scientific Research**. Manuscript submitted to *ACM Computing Surveys*.

[S.2] Li R.*, **Luo Z.***, Du X. **FG-PRM: Fine-Grained Hallucination Detection and Mitigation in LLM Reasoning**. Manuscript submitted to *ACL 2025*.

[C.1] Xu Y., **Luo Z.***, Wang Q.*, et al. **Point2Graph: An End-to-end Point cloud-based Open-Vocabulary 3D Scene Graph for Robot Navigation**. Accepted by *ICRA 2025*.

[J.1] **Luo Z.**, Gao C., Zhou J. **Rough sets-based tri-trade for partially labeled data.** *Applied Intelligence* (IF: 5.3), 2023.

[C.2] Ming S., H. Liu., **Luo Z.**, et al. **Label-Aware Recurrent Reading for Multi-Label Classification**. *2022 Asia Conference on Algorithms, Computing and Machine Learning (CACML)*. IEEE, 2022.

Honors and Awards

- **The Wang Kuo Tong Memorial Fellowship $45,000** - One award each year — *2023-2024*
- **Outstanding Graduate Award of Shenzhen University** - Top 1% Graduates — *June 2023*
- **COMAP Mathematical Contest in Modeling** - *Meritorious Winner* — *May 2021*
- **Scholarships of Shenzhen University** — *2020-2023*

Additional Information

- **First-generation college student**
- **Languages:** Chinese (Native level), English (Proficiency level)
- **Interests:** Basketball, hiking, cooking