

Ziming Luo

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EDUCATION

- **University of Michigan** Ann Arbor, USA
MSc in Electrical and Computer Engineering Aug 2023 - Dec 2024
 - GPA: 3.99/4.0
 - Selected Coursework: Machine Learning, Natural Language Processing, Large Language Model, Foundation of Computer Vision, Advanced Topics in Computer Vision, Reinforcement Learning, Probability and Random Processes, Matrix Methods for Signal Processing.
- **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: Overall 3.88/4.0; CS-only 4.0/4.0
 - Status: **First Generation College Student**

PUBLICATIONS

W=WORKSHOP, C=CONFERENCE, J=JOURNAL, S=IN SUBMISSION, P=PATENT

* Denotes co-first authors

- [W.1] Luo Z., Atoosa K., Nihar B. S. **The More You Automate, the Less You See: The Hidden Pitfalls of AI Scientist Systems.** *NeurIPS 2025 AI4Science (Spotlight)*; *WCRI 2025 (Oral)*; Manuscript submitted to *Science*.
- [C.1] Yan, S.*, Li, R.*, Luo Z.*, et al. **LMR-BENCH: Evaluating LLM Agent's Ability on Reproducing Language Modeling Research.** *EMNLP Main Conference 2025*.
- [C.2] Li R.*, Luo Z.*, Du X. **FG-PRM: Fine-Grained Hallucination Detection and Mitigation in LLM Reasoning.** *EMNLP Findings 2025*; *ACL 2025 KnowFM*.
- [C.3] Xu Y., Luo Z.*, Wang Q.*, et al. **Point2Graph: An End-to-end Point cloud-based Open-Vocabulary 3D Scene Graph for Robot Navigation.** *ICRA 2025*.
- [J.1] Luo Z., Gao C., Zhou J. **Rough sets-based tri-trade for partially labeled data.** *Applied Intelligence (IF: 3.8)*, 2023.
- [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.*, et al. **AALC: Large Language Model Efficient Reasoning via Adaptive Accuracy-Length Control.** Manuscript submitted to *ACL 2026*.
- [P.1] **An Entity Alignment Method for Customs Commodity Knowledge Graph.** CN Patent, Patent No. CN115641599A. Grant Date: Nov 03, 2022, Publication Date: Jan 24, 2023.
- [P.2] **A Quality Assessment Method of Customs Commodity Declaration.** CN Patent, Patent No. CN115640400A. Grant Date: Nov 03, 2022, Publication Date: Jan 24, 2023.
- [P.3] **A Risk Identification Method for Customs Commodities Based on Declaration Quality Assessment.** CN Patent, Patent No. CN115617979A, filed Nov 11, 2022, and issued Jan 17, 2023.

RESEARCH EXPERIENCE

- **Carnegie Mellon University** Pittsburgh, USA
Full-time Research Associate | Advisor: Prof. *Nihar B. Shah* & Prof. *Atoosa Kasirzadeh* Apr 2025 - Present
 - Conducted a rigorous empirical analysis of fully autonomous AI scientist systems, uncovering critical validity threats including data leakage and metric misuse that undermine scientific integrity.
 - Developed an automated LLM-auditor to detect experimental flaws in AI-generated code, trace logs, and manuscripts.
 - Provided practical recommendations for developers and peer review bodies to ensure scientific rigor in AI-generated research; work selected for a Spotlight at NeurIPS 2025 AI4Science, Oral Presentation at WCRI 2025 and currently under review at Science.
- **University of Michigan** Ann Arbor, USA
Graduate Researcher | Advisor: Prof. *Vineet Kamat* May 2024 - Dec 2024
 - 3D Scene Understanding (Point2Graph): Developed an end-to-end hierarchical 3D scene graph framework that integrates room segmentation with open-vocabulary object classification to enable robot navigation without relying on well-aligned posed images (ICRA 2025).

- **University of Texas at Dallas**

Graduate Researcher | Advisor: Prof. [Xinya Du](#)

Remote
May 2024 - Present
- Reasoning Verification (FG-PRM): Designed a fine-grained hallucination detection method using Process Reward Models (PRMs) to mitigate factual errors and improve faithfulness in LLM reasoning chains (EMNLP Findings 2025).
 - Efficient Reasoning (AALC): Proposed an adaptive accuracy-length control mechanism via RL-finetuning, optimizing the trade-off between computational cost and reasoning performance in large models (Submitted to ACL 2026).
 - Reproduction Benchmark (LMR-BENCH): Spearheaded the development of a benchmark evaluating LLM agents on their ability to reproduce existing language modeling research, establishing a new standard for agentic capability testing (EMNLP 2025 Main Conference).
 - Scientific LLM Survey: Led a comprehensive survey on Large Language Models for Scientific Research, mapping the utility of LLMs across hypothesis generation, experimental planning, and peer review; submitted to ACM Computing Surveys.

INDUSTRY EXPERIENCE

- **Event Horizon - a startup**

Deep Learning Intern

Shenzhen, China
Jun 2023 - Aug 2023
- Developed a personal desktop-assistant chatbot and resolved a technical bottleneck: extracting user activity logs from raw desktop screenshots.
 - Built an OCR-based visual-to-text pipeline that combined heuristic segmentation with structured extraction, enabling LLMs to interpret user behavior and deliver context-aware assistance.
- **Shenzhen Customs**

Data Mining Intern

Shenzhen, China
Jun 2021 - Sep 2022
- Engineered a large-scale commodity knowledge graph using Neo4j, integrating distributed cleaning and mining pipelines to model complex relationships in customs declaration data.
 - Developed graph-based algorithms to detect tax evasion patterns (such as price under-reporting), directly leading to the recovery of over **CNY 20 million** in evaded taxes by 2022.
 - Led the full-stack development of the Customs Knowledge Graph System for visualization and statistical analysis, resulting in 3 granted patents and a registered software copyright as the primary contributor.

HONORS & AWARDS

- **The Wang Kuo Tong Memorial Fellowship \$45,000**, Sole recipient in Michigan Engineering 2023-2024
- **Outstanding Graduate Award**, Shenzhen University (Top 1%) June 2023
- **National College Student Innovation and Entrepreneurship Training Program**, CNY 20,000 May 2022
- **Guangdong Provincial Fund for College Student Innovation and Technology**, CNY 50,000 Sept. 2022
- **Multiple Scholarships of Shenzhen University** 2020-2023

COMMUNITY SERVICES & MEMBERSHIPS

- **Conference Reviewer:** AAAI 2026, ACL 2025, EMNLP 2025, NeurIPS 2025, ACL Knowledgeable Foundation Models Workshop 2025, NeurIPS AI for Scientific Discovery Workshop 2025, NeurIPS Efficient Reasoning Workshop 2025.
- **Journal Reviewer:** IEEE Transactions on Automation Science and Engineering 2024
- **Volunteer:** 80 volunteer hours registered at Shenzhen University, e.g., charity sales, volunteer teaching.
- **Memberships:** Student Member of the Chinese Association for Artificial Intelligence

SKILLS

- **Programming Languages:** Python, C/C++, Java, JavaScript, MATLAB, Julia, MySQL
- **Tools and Frameworks:** Git, LaTeX, Neo4j, Tableau, PyTorch.

REFERENCES

1. **Nihar B. Shah**
Associate Professor, Carnegie Mellon University
Email: nihars@cs.cmu.edu
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Relationship: Research Advisor
2. **Atoosa Kasirzadeh**
Assistant Professor, Carnegie Mellon University
Email: akasirza@andrew.cmu.edu
Homepage: <https://kasirzadeh.org/>
Relationship: Research Advisor
3. **Vineet Kamat**
Professor, University of Michigan
Email: vkamat@umich.edu
Homepage: <https://live.engin.umich.edu/home>
Relationship: Research Advisor
4. **Xinya Du**
Assistant Professor, University of Texas at Dallas
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Homepage: <https://xinyadu.github.io/>
Relationship: Research Advisor
5. **Xu Wang**
Associate Professor, Shenzhen University
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Homepage: https://scholar.google.com/citations?hl=en&user=XNDHhIEAAAAJ&view_op
Relationship: Research Advisor and Major Advisor