

Lu Dong

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Behavior Modeling/ Generative AI/ Agentic AI

Personal Homepage
LinkedIn: Lu Dong

I am a Ph.D. candidate in Computer Science and Engineering at the University at Buffalo (SUNY). My research lies at the intersection of multimodal human behavior modeling, generative AI, and agentic intelligence, for supporting children's learning and education. My work spans computer vision, large language models (LLMs), 3D vision, generative models, and multimodal foundation models. Representative projects include sign-language generation, multi-person interaction, human–scene interaction, and human–social robot collaboration. Previously, I gained experience in reinforcement learning, recommendation systems, and data visualization. I am now seeking Applied Research Scientist or Postdoctoral Researcher roles.

EDUCATION

University at Buffalo- State University of New York (UB), USA

Ph.D. in Computer Science and Engineering.

08/2021- Present

Rochester Institute of Technology, USA

Ph.D. in Computing and Information Sciences. (GPA 4.0; transferred with advisor)

08/2020-05/2021

Xi'an Jiaotong University (XJTU), CHINA

M.S. in Computer Science and Technology

08/2013-05/2016

RESEARCH EXPERIENCE

National AI Institute for Exceptional Education, University at Buffalo-SUNY, Buffalo, NY, USA.

01/2024–Now

Position: Research Assistant, Advisor: Ifeoma Nwogu

- **Research Focus: Interactive Behavior Modeling towards Education (LLM Agent · Embodied Interaction · Spacial Intelligence)**

- Topic: Agentic LLM Frameworks for Socially Intelligent Human– Social Robot Interaction. [AutoMisty-IROS'25][MistyPilot]
- Topic: Spatial Chain-of-Thought Reasoning on Human-Scene Interaction. [CoT-HSI]
- Topic: Strategy-Driven 3D Adult Behavior Generation for Children's Knowledge Acquisition. [StrategyGen]
- Topic: LLM-Driven Interpretation of Students' Learning Cognitive States (e.g., Confusion Intervals) from Subtle Facial Cues (eg: Facial Action Units, Valence–Arousal, Gaze Tracking, and Eye Blink Patterns). [SCOPE]

Human Behavior Modeling Lab, University at Buffalo-SUNY, Buffalo, NY, USA.

08/2021–Now

Position: Research Assistant, Advisor: Ifeoma Nwogu

- **Research Focus: Multimodal Modeling of Human Behaviors (cVAE · VQ-VAE · Diffusion Models · LLM Post-Training).**

- Topic: 3D American Sign Language Motion Reconstruction and Generation.[SignAvatar- IEEE FG'24] [wSignGen-EMNLP'24]
- Topic: Towards Open Domain Text- Driven Synthesis of Multi-Person Motions. [Multi-Person- ECCV'24]
- Topic: Language-guided Human Motion Synthesis with Atomic Actions. [ATOM-ACMMM'23]

YLAB, Xi'an Jiaotong University, Xi'an, Shaanxi, China.

08/2013–06/2016

Position: Research Assistant, Advisor: Xinyu Yang

- **Research Focus: Exploring the Enduring MEME of Traditional Folk Songs (Music Machine Learning · MIDI· Audio Analysis).**

- Topic: Exploring the General Melodic Characteristics of XinTianYou Folk Songs. [XinTianYou-SMC'15]
- Topic: Towards a Systematic Classification and Benchmarking of Chinese Folk Songs.[Chinese Folk Songs]

RESEARCH INTERNSHIP

NEC Laboratories America, Princeton, NJ

05/2025–08/2025

Position: Research Internship, In-Person, Mentor: Deep Patel and Iain Melvin

- Focus: Reasoning and Planning for LLM-Driven 3D Human Motion–Scene Interaction. [CoT-HSI]

InnoPeak Technology (OPPO US Research), Seattle, WA, USA.

06/2023–08/2023

Position: Research Internship, In-Person, Mentor: Dr. Mitch Hill and Dr. Guo-Jun Qi

- Focus: Number-Controlled Multi-Person Motion Synthesis Towards Open-Domain. [Multi-Person- ECCV'24]

InnoPeak Technology (OPPO US Research), Palo Alto, CA, USA.

05/2022–08/2022

Position: Research Internship, In-Person, Mentor: Dr. Xun Xu and Dr. Shuxue Quan

- Focus: Human pose estimation for fitness under severe self-occlusion. [Pose Estimation]

SELECTED PUBLICATIONS

1. **Lu Dong***, Xiao Wang*, Jingchen Sun, Ifeoma Nwogu, Srirangaraj Setlur, Venu Govindaraju."MistyPilot: An Agentic Fast–Slow Thinking LLM Framework for Misty Social Robots" *under review*.

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2. **Lu Dong***, Xiao Wang*, Sahana Rangasrinivasan, Ifeoma Nwogu, Srirangaraj Setlur, Venu Govindaraju."AutoMisty: A Multi-Agent LLM Framework for Automated Code Generation in the Misty Social Robot." *International Conference on Intelligent Robots and Systems (IROS 2025)*.
3. **Lu Dong**, Xiao Wang, Ifeoma Nwogu. "Word-Conditioned 3D American Sign Language Motion Generation" *The 2024 Conference on Empirical Methods in Natural Language Processing (EMNLP 2024)*.
4. **Lu Dong***, Xiao Wang*, Srirangaraj Setlur, Venu Govindaraju, Ifeoma Nwogu."Ig3D: Integrating 3D Face Representations in Facial Expression Inference" *The 18th European Conference on Computer Vision, ECCVW 2024*.
5. Mengyi Shan, **Lu Dong**, Yutao Han, Yuan Yao, Tao Liu, Ifeoma Nwogu, Guo-Jun Qi, Mitch Hill. "Towards Open Domain Text-Driven Synthesis of Multi-Person Motions." *The 18th European Conference on Computer Vision, ECCV 2024*.
6. **Lu Dong**, Lipisha Nitin Chaudhary, Fei Xu, Xiao Wang, Mason Lary, Ifeoma Nwogu. "SignAvatar: Sign Language 3D Motion Reconstruction and Generation." *The 18th IEEE International Conference on Automatic Face and Gesture Recognition (FG 2024)*.
7. Yuanhao Zhai, Mingzhen Huang, Tianyu Luan, **Lu Dong**, Ifeoma Nwogu, Siwei Lyu, David Doermann, Junsong Yuan. "Language-guided Human Motion Synthesis with Atomic Actions." *The 31st ACM International Conference on Multimedia, 2023(ACM MM'23)*.
8. Fei Xu, Lipisha Nitin Chaudhary, **Lu Dong**, Srirangaraj Setlur, Venu Govindaraju, Ifeoma Nwogu. "A Study of Video-based Human Representation for American Sign Language Alphabet Generation." *(FG 2024)*.

SELECTED PROJECTS

- Information Retrieval Project - Covid19 & Vaccine Analysis Search Engine [Page Link]** 09/2021-12/2021 @UB
- Scraped 50,000 tweets using Tweepy on COVID-19 and vaccines from diverse languages, countries, public, and authorities.
 - Designed a full-stack web application with a Google-like front end and a flask-based backend, integrating deep learning models.
 - Provided trend analysis of public and authoritative attitudes toward vaccines, along with fake news detection.
- Natural Language Processing Project - Medical Tutoring ChatBot [Page Link]** 09/2021-12/2021 @UB
- Curated structured dialogue datasets from raw files such as HTML, PDF, and text documents.
 - Developed a full-stack medical tutoring chatbot to improve medical literacy in underdeveloped regions of India.
 - Proposed a framework for smoother dialogue transitions to enhance user attention and engagement.

WORK EXPERIENCE

- Shaanxi Haina Electronic Technology Co., LTD, Xi'an, Shaanxi, China.** 09/2016–04/2020
- Position: Principal Data Scientist*
- Developed the recommendation system, improving user satisfaction and overall product experience.
 - Built and led the Information Collection & Retrieval Team, boosting efficiency by 20%.
 - Developed strategies that increased client conversions by 30% and doubled total team revenue.

ACADEMIC SERVICE

- Academic Reviewer:** Conference: ACL Rolling Review (ARR), February & July 2025;
ACM Multimedia (MM), 2023 & 2024;
- Journal:** Computer Vision and Image Understanding (CVIU), 2025;
Machine Vision and Applications (Nature MVA), 2024, 2025;
IEEE Transactions on Affective Computing (TAFFC), 2024;
- IEEE Conference Organization:** Local Student Chair, [IJCB Conference 2024](#) @ Buffalo, NY.
- Professional Competition:** Invited Judge for UB Hacking Competition (2022).
- Invited Talk:** Invited talk at Women in Tech Western New York, 2025;
Invited talk on 'AI Research and Career Development' 2024;
- Academic Membership:** ACL Member, IEEE Biometrics Council Member, IEEE Student Member.

AWARDS & HONOR

- PhD Research Award, UB, 2025; Best AI Project Award, UB, 2024;
- IJCB Conference Leadership Award, 2024; ECCV Conference Grant, 2024;
- National Graduate Academic Scholarship, 2013–2016; Outstanding Graduate Student Award, 2014 and 2015;
- National Endeavor Scholarship for Outstanding Undergraduates, 2010; Outstanding Undergraduate Student Award, 2010.