

Lu Dong

(716) 730-0429; Buffalo, NY
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Generative AI/ Embodied AI / 3D Human Behavior

Personal Homepage
LinkedIn: Lu Dong

I'm a Ph.D. candidate in Computer Science specializing in Embodied AI, Generative AI, and Multimodal Foundation Models. I develop scalable AI systems for embodied intelligence, spanning multimodal perception, foundation model training, large-scale data pipelines, and deployment-oriented engineering. My research has resulted in publications at leading venues including IROS, ECCV, EMNLP, and ACM MM, complemented by multiple industry research internships translating embodied AI innovations into production-ready systems.

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: Embodied AI for Education (Agentic AI · Spatial AI · 3D Situated Interaction)**

- 3D Human Upper-Body Reconstruction from Egocentric Views. [EgoMax3D]
- Spatial reasoning for human–scene interaction. [Spatial-HSI]
- Agentic LLMs for human–robot interaction. [AutoMisty-IROS'25][MistyPilot-ECCV'27 & ACVR]
- Multimodal foundation models for ASD intervention analysis. [CVPR'26 & CV4EDU]
- LLM-based reasoning for cognitive state understanding and confusion localization in educational videos [CVPR'26 & CV4EDU]

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

08/2021–Now

Position: Research Assistant, Advisor: Ifeoma Nwogu

- **Research Focus: Multimodal Human Behavior Modeling (Diffusion Models · Foundation Models · Generative AI).**

- 3D Sign Language Motion Reconstruction and Generation. [IEEE FG'26][SignAvatar- IEEE FG'24] [wSignGen-EMNLP'24]
- Open-domain multi-person motion generation using diffusion models. [Multi-Person- ECCV'24]
- 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: Music Machine Learning and Computational Music Analysis (Symbolic Music · MIDI · Folk Song Modeling)**

- Computational modeling of XinTianYou folk songs. [XinTianYou-SMC'15]
- Pattern recognition and benchmarking of Chinese folk songs.[Chinese Folk Songs]

INDUSTRY EXPERIENCE

MaxInsights, Santa Clara, CA, USA.

05/2026–08/2026

Position: Research Internship, In-Person, Mentor: Chao Li

- Developed scalable egocentric 3D human pose estimation systems using large-scale stereo datasets for robot perception.
- Developed transformer-based foundation models for egocentric perception and Vision-Language-Action (VLA) learning.
- Designed scalable data processing, training, and evaluation pipelines for millions of multimodal human motion samples.
- Translated embodied AI research into production-ready systems, driving continuous improvements in the robustness and deployment efficiency of EgoMax3D.

NEC Laboratories America, Princeton, NJ, USA.

05/2025–08/2025

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

- Developed novel LLM-based reasoning algorithms for human–scene interaction using 3D spatial representations.
- Proposed an embodied reasoning framework for long-horizon interaction planning. [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

- Developed controllable diffusion models for open-domain multi-person motion generation. [MPMG-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

- Developed robust human pose estimation under severe self-occlusion.[Pose Estimation in Production]

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

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TECHNICAL SKILLS

Programming:	Python, C++, CUDA, SQL, Bash
Deep Learning:	PyTorch, PyTorch Lightning, Transformers, Diffusion Models, Foundation Models, LLMs, Vision-Language Models (VLMs), Vision-Language-Action (VLA)
Embodied AI:	Simulation, Robot Learning, Human-Scene Interaction, Human Motion Generation, 3D Human Pose Estimation, 3D Mesh Reconstruction, SMPL-X, MANO.
Systems:	Linux, Git, Docker, GPU Computing, Distributed Training, Large-scale Data Pipelines

SELECTED PUBLICATIONS

1. **Lu Dong***, Xiao Wang*, Ifeoma Nwogu, et al. "MistyPilot: An Agentic Fast-Slow Thinking LLM Framework for Misty Social Robots." *ECCV 2027 Workshop- 14th Assistive Computer Vision and Robotics*.
2. **Lu Dong***, Xiao Wang*, Sahana Rangasrinivasan, et al. "AutoMisty: A Multi-Agent LLM Framework for Automated Code Generation in the Misty Social Robot." *IROS 2025 Oral*.
3. **Lu Dong**, Xiao Wang, Ifeoma Nwogu. "Word-Conditioned 3D American Sign Language Motion Generation." *EMNLP 2024*.
4. Mengyi Shan, **Lu Dong**, et al. "Towards Open-Domain Multi-Person Motion Synthesis." *ECCV 2024*.
5. **Lu Dong**, Xiao Wang, et al. "SignAvatar: Sign Language 3D Motion Reconstruction and Generation." *FG 2024*.
6. **Lu Dong***, Xiao Wang*, et al.. "ConfusionBench." *CVPR 2026 Workshop (CV4Edu)*.
7. **Lu Dong***, Xiao Wang*, et al.. "InterventionLens." *CVPR 2026 Workshop (CV4Edu)*.
8. **Lu Dong***, Xiao Wang*, et al."Ig3D: Integrating 3D Face Representations in Facial Expression Inference." *ECCV 2024 Workshop*.
9. Yuanhao Zhai, Mingzhen Huang, Tianyu Luan, **Lu Dong**, et al. "Language-guided Human Motion Synthesis with Atomic Actions." *ACM MM 2023*.

ACADEMIC SERVICE

Academic Reviewer (20+):	Conference: ACL Rolling Review (ARR), 2025, 2026, 2027; ACM Multimedia (MM), 2023 & 2024; IEEE Face and Gesture (FG) 2026; Journal: Computer Vision and Image Understanding (CVIU), 2025, 2026; 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.

LATEST AWARDS & HONOR

- Zero-to-One Innovation Award, MaxInsights, August 2026;
- PhD Research Award, UB, 2025;
- Best AI Project Award, UB, 2024;
- IJCB Conference Leadership Award, 2024;
- UB GSA Grant, 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.