Lu Dong

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Behavior Modeling/ Generative AI/ Agentic AI

Personal Homepage
LinkedIn: Lu Dong

I am a PhD candidate in Computer Science and Engineering at the University at Buffalo(UB). My research centers on generative AI, human behavior modeling, and agentic intelligence—specifically advancing human-centered motion generation and interactive 3D digital humans endowed with domain expertise and empathetic social intelligence. My work spans large language models (LLMs), 3D vision, generative models, and multimodal foundation models. Key projects include sign-language generation, multi-person interaction, human–scene interaction, and human–robot collaboration. Previously, I gained experience in reinforcement learning, recommendation systems, and data visualization. I am now seeking 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 (VLM · Embodied Interaction · Spacial Intelligence)**
  - Topic: Spatial Chain-of-Thought Reasoning on Human-Scene Interaction.
  - Topic: Agentic LLM Frameworks for Socially Intelligent Human–Robot Interaction. [AutoMisty, MistyPilot]
  - Topic: Strategy-Driven 3D Adult Behavior Generation with Social Intelligence for Children's Knowledge Acquisition.
  - Topic: Enable LLMs to Interpret Students' Learning Cognitive States(eg: confusion interval) from Subtle Facial Cues.

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 Behavior Generation. (AIGC in 3D Human).**
  - Topic: 3D Sign Language Motion Reconstruction and Generation.[SignAvatar Page] [wSignGen Page]
  - Topic: Towards Open Domain Text- Driven Synthesis of Multi-Person Motions. [Multi-Person Page]
  - Topic: Language-guided Human Motion Synthesis with Atomic Actions. [ATOM Page]

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 (Musical Machine Learning).**
  - Topic: Unveiling Chinese Folk Songs' Melodic Characteristics via Pattern Recognition.
  - Topic: Towards a Systematic Classification and Benchmarking of Traditional 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.

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 Page]

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.