

Xin Li

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lixin.ai | [Google Scholar](https://scholar.google.com/citations?user=xin019)

EDUCATION

Nanyang Technological University (NTU)

Singapore

Ph.D. in Electrical and Electronic Engineering (Expected)

Jan. 2025 – 2029

– **Advisor:** Prof. Chau Yuen (IEEE Fellow) **Focus:** Trustworthy LLMs, Formal Verification, AI for Wireless

Peking University

Beijing, China

M.E. in Electronics and Communication Engineering

Aug. 2018 – May 2021

– **Advisor:** Prof. Jinlong Lin **Thesis:** Leveraging Geometric Regularities for Robust Visual-Inertial Odometry

Northeastern University

Qinhuangdao, China

B.E. in Measurement and Control Technology

Aug. 2014 – May 2018

SELECTED PUBLICATIONS

** indicates equal contribution; see Google Scholar for complete list.*

Local Success Does Not Compose: Benchmarking Large Language Models for Compositional Formal Verification

ICLR 2026

– X. Xu*, X. Li*, X. Qu, J. Fu, B. Yuan [\[arXiv\]](#) [\[Website\]](#)

WirelessMathBench: A Mathematical Modeling Benchmark for LLMs in Wireless Communications

ACL 2025 Findings

– X. Li, M. Liu, L. Wei, J. An, M. Debbah, C. Yuen [\[Website\]](#) [\[Code\]](#)

TransPathNet: A Two-Stage Framework for Indoor Radio Map Prediction

ICASSP 2025

– X. Li, R. Liu, S. Xu, S. G. Razul, C. Yuen [\[Website\]](#) [\[Code\]](#)

WirelessMathLM: Teaching Mathematical Reasoning for LLMs in Wireless Communications with RL

arXiv 2025

– X. Li, M. Liu, Y. Zhu, W. Zhang, L. Wei, J. An, C. Yuen [\[arXiv\]](#) [\[Website\]](#)

LACP: LLM Agent Communication Protocol Requires Urgent Standardization

NeurIPS 2025 Workshop

– X. Li, M. Liu, C. Yuen [\[Website\]](#)

(AI4NextG Workshop)

Re:Form—Reducing Human Priors in Scalable Formal Software Verification with RL in LLMs

Tech Report 2025

– C. Yan*, F. Che*, X. Huang*, X. Xu*, X. Li*, Y. Li*, X. Qu*, J. Shi, Z. He, C. Lin, Y. Yang, B. Yuan, H. Zhao, Y. Qiao, B. Zhou, J. Fu [\[arXiv\]](#) [\[Code\]](#)

Onboard Terrain Classification via Stacked Intelligent Metasurface-Diffractive Deep Neural Networks

ICLR 2025 Workshop

– M. Liu, X. Li, J. An, C. Yuen [\[Website\]](#)

(ML4RS Workshop)

Co-planar Parametrization for Stereo-SLAM and Visual-Inertial Odometry

IEEE RA-L 2020

– X. Li*, Y. Li*, E. P. Örnek, J. Lin, F. Tombari [\[arXiv\]](#) [\[Code\]](#)

Leveraging Planar Regularities for Point Line Visual-Inertial Odometry

IROS 2020

– X. Li*, Y. He*, J. Lin, X. Liu [\[arXiv\]](#) [\[Code\]](#)

EXPERIENCE

Nanyang Technological University	Singapore
<i>Research Assistant, Advisor: Prof. Chau Yuen (IEEE Fellow)</i>	Apr. 2024 – Jan. 2025
– Developed WirelessMathBench (Findings of ACL 2025), the first benchmark for evaluating LLM mathematical reasoning in wireless domains, establishing a new standard for domain-specific evaluation. – Designed TransPathNet (ICASSP 2025), a two-stage deep learning framework combining TransNeXt with multi-scale attention decoding; secured 4th Place in Indoor Pathloss Prediction Challenge (9.73 dB RMSE).	
Gausium Robotics	Singapore
<i>SLAM Algorithm Engineer (Project Lead)</i>	Mar. 2022 – Mar. 2024
– Led a team of 5 engineers developing hierarchical visual localization systems for commercial cleaning robots. – Achieved 95% localization accuracy across 100,000+ m^2 complex environments. – Deployed solutions to a global fleet of 1,000+ active robots, ensuring robust operation in dynamic scenes.	
Microsoft Research Asia (MSRA)	Beijing, China
<i>Research Intern, Mentors: Dr. Yang Liu & Dr. Yizhong Zhang</i>	Sep. 2020 – Mar. 2021
– Engineered a multi-sensor fusion system (RGB-D + IMU) for large-scale indoor mapping. – Generated high-fidelity vectorized maps for 10,000+ m^2 of commercial space with sub-meter accuracy.	
MEGVII Technology	Beijing, China
<i>Research Intern, Mentor: Dr. Yijia He</i>	May 2019 – Mar. 2020
– Developed real-time monocular Visual-Inertial Odometry (VIO) leveraging heterogeneous features. – Achieved semi-dense 3D mesh reconstruction at 30+ FPS, leading to a first-author paper at IROS 2020.	

GRANTS & AWARDS

Research Grants	
Google Gemini Academic Program Award (\$10,000 USD)	2026
Modal Academics Compute Grant (\$2,000) Cohere Labs Catalyst Grant (\$1,500)	2025
OpenAI Researcher Access Program (\$1,000)	2025
Academic Honors	
Rohde & Schwarz Award (IEEE 6G Summit Singapore)	2025
PREMIA Best Student Paper Award Finalist	2025
NTU Research Scholarship (Full Ph.D. Funding)	2025

INVITED TALKS

Teaching Large Language Models Mathematical Reasoning in Wireless Communications	Oct. 2025
– ISEE Youth Scholar Forum, Zhejiang University	
WirelessMathBench: A Mathematical Modeling Benchmark for LLMs in Wireless	Jun. 2025
– NICE (NLP Academic Exchange Platform) Session 66 @ ICML & ACL 2025	

ACADEMIC SERVICE

Workshop Organizer	: AIR4D@IROS 2025 (Advancements for Intelligent Robotics in 4D Scenes)
Conference Reviewer	: NeurIPS, ICLR, ICML, AAAI, CVPR, ECCV, AISTATS, SIGGRAPH, IROS, ICRA
Journal Reviewer	: IEEE Robotics and Automation Letters (RA-L), IEEE TNNLS

SKILLS

AI & ML	: PyTorch, Hugging Face, LLM Fine-tuning (RLHF/DPO), Diffusion Models, Reinforcement Learning
Robotics	: ROS/ROS2, SLAM, VIO, Sensor Fusion, Kalman Filtering, LiDAR Processing
Languages	: Python (Expert), C++ (Proficient), CUDA, LaTeX, English (Fluent), Chinese (Native)