Linhan Wang

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EDUCATION

Virginia Tech — Falls Church, USA
Ph.D. Student in Computer Science — *Jan. 2023 – Present*
Supervisor: Prof. Chang-Tien Lu

University of California, Los Angeles — Los Angeles, USA
Visiting Student and Research Assistant — *Jun. 2016 – Sep. 2016*

Peking University — Beijing, China
Bachelor in Atmospheric and Oceanic Science, School of Physics — *Sep. 2013 – Jun. 2017*

RESEARCH INTERESTS

Computer vision: End-to-end Driving, Few-shot/Transfer Learning, Medical Image Semantic Segmentation
Computer graphics: Neural Rendering, 3D Gaussian Splatting

First-Author PUBLICATIONS

[1] (**ISBI** 2026.) **L. Wang**, J. Dou, W. Li, S. Wang, Z. Xie, C.T. Lu, Y. Chen, "SemiETPicker: Fast and Label-Efficient Particle Picking for CryoET Tomography Using Semi-Supervised Learning," Proceedings of the 23rd IEEE International Symposium on Biomedical Imaging (ISBI), London, United Kingdom, Apr. 8-11, 2026.
[2] (**NeurIPS** 2024.) **L. Wang**, K. Cheng, S. Lei, S. Wang, W. Yin, C. Lei, X. Long, C.T. Lu, "DC-Gaussian: Improving 3D Gaussian Splatting for Reflective Dash Cam Videos," Proceedings of the Thirty-Eighth Annual Conference on Neural Information Processing Systems (NeurIPS), Vancouver, Canada, Dec. 9-15, 2024.
[3] (**SIGSPATIAL** 2023.) **L. Wang**, S. Lei, J. He, S. Wang, M. Zhang, C.T. Lu, "Self-Correlation and Cross-Correlation Learning for Few-Shot Remote Sensing Image Semantic Segmentation," Proceedings of the 31st ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems, Hamburg, Germany, Nov. 13-16, 2023.
[4] (**Under review**) **L. Wang**, Z. Yang, G. Zhang, X. Liu, X. Zheng, X. Long, C.T. Lu, C. Bai, "Drive-JEPA: Video JEPA Meets Multimodal Trajectory Distillation for End-to-End Driving," 2026.
[5] (**Under review**) **L. Wang**, S. Wang, M. Zhang, S. Mansi, C.T. Lu, "Where Does the Bond Signal Live? Reading 10-Q Filings with LLM Q&A and Adversarial Debate," 2026.
[6] (**Under review**) **L. Wang**, M. Song, S. Wang, C.T. Lu, Y. Chen, "Learning Subject Tags from Incomplete Labels: A Recall-Oriented VLM Pipeline for Historical Photographs," 2026.

Co-Author PUBLICATIONS

[1] (**KDD** 2025.) S. Sarkar, R.B. Yousuf, **L. Wang**, B. Mayer, T. Mortier, V. Deklerck, J. Truszkowski, J.C. Simeone, M. Norman, J. Saunders, C.T. Lu, N. Ramakrishnan, "Chasing the Timber Trail: Machine Learning to Reveal Harvest Location Misrepresentation," Proceedings of the 31st ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), Toronto, Canada, Aug. 3-7, 2025.
[2] (**IUI** 2025.) Wilchek, M., **Wang, L.**, Dickinson, S., Feuerbacher, E., Luther, K. and Batarseh, F.A., 2025, March. KHAIT: K-9 Handler Artificial Intelligence Teaming for Collaborative Sensemaking. In Proceedings of the 30th International Conference on Intelligent User Interfaces (pp. 925-937).
[3] (**NAACL** 2024.) S. Wang, T. Ji, J. He, M. Almutairi, D. Wang, **L. Wang**, M. Zhang, C.T. Lu, "AMA-LSTM: Pioneering Robust and Fair Financial Audio Analysis for Stock Volatility Prediction," Proceedings of the 2024 Conference of the North American Chapter of the Association for Computational Linguistics (NAACL), 2024.
[4] (**ICASSP** 2023.) M. Zhang, J. He, S. Lei, M. Yue, **L. Wang**, C.T. Lu, "Can LLM Find the Green Circle? Investigating Human-Guided Tool Manipulation for Compositional Generalization," Proceedings of the 2024 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2024), Seoul, Korea, April 14-19, 2024.

RESEARCH PROJECTS

VJEPA Meets Multimodal Trajectory Distillation for End-to-End Driving — Advisor: Chen Bai
Key Researcher — *Dec. 2023 – May. 2024*

Project Goal: Develop an end-to-end driving framework that combines V-JEPA video pretraining with simulator-guided multimodal trajectory distillation to improve multimodal planning and achieve state-of-the-art results on NAVSIM.
Methods: We pretrain a ViT-based vision encoder with the V-JEPA objective on a curated large-scale front-view driving video dataset to learn predictive spatiotemporal representations suitable for planning. On top of these representations, we build a proposal-centric planner that initializes multiple trajectory proposals and iteratively refines them using waypoint-anchored deformable attention and BEV feature aggregation around predicted waypoints. To overcome single-demonstration supervision, we distill diverse "pseudo-teacher" trajectories selected via rule-based simulator scoring (EPDM/EPDMS) and train proposals to match both human and high-quality simulator trajectories. We learn a neural scorer for candidate selection and add a momentum-aware penalty to reduce frame-to-frame trajectory distortion, improving comfort while preserving safety and rule compliance.
Key techniques: End-to-end Autonomous Driving, V-JEPA, Multimodal Trajectories Distillation.
Publications: One paper is under review.

Improving 3D Gaussian Splatting for Reflective Dash Cam Videos Advisor: Chang-Tien Lu
Key Researcher *Dec. 2023 – May. 2024*

Project Goal: Dash cam videos often suffer from severe obstructions such as reflections and occlusions on the windshields, which significantly impede the application of neural rendering techniques. This work aims to improve 3D Gaussian Splatting for dash cam videos and remove the obstructions
Methods: We model the driving scenes behind the windshield and the obstructions on the windshield separately. The driving scenes are captured using the original 3D Gaussian Splatting technique. To model the obstructions, we introduce an Illumination-Aware Obstruction Modeling module, which utilizes the static motion prior of obstructions and delivers robust performance under varying lighting conditions.
Key techniques: 3D Gaussian Splatting, Multiresolution Hashencoding, Sfm, Muti-view Stereo.
Publications: One paper has been accepted to NeurIPS 2024.

Few-shot Semantic Segmentations on Remote Sensing Images Advisor: Chang-Tien Lu
Key Researcher *Jan. 2023 – Jun. 2023*

Project Goal: Cross-correlation between support images and query images plays a very important role in previous few-shot learning works. To improve the performance on remote sensing images, we propose to consider the self-correlation in query images.
Methods: Our method builds on previous works by generating initial segment masks on the query image, which are then filtered based on uncertainty. Using these filtered masks, we incorporate self-correlation within our model. Additionally, we create class-agnostic masks using a classic spectral method that integrates high-level semantic features with low-level visual information.
Key techniques: Hypercorrelation Pyramid, 4D Convolution, Spectral Segmentation.
Publications: One paper has been accepted to Sigspatial 2023.

Particle Picking for CryoET Tomography Using Semi-Supervised Learning Advisor: Yinlin Chen
Key Researcher *Jun. 2024 – Aug. 2024*

Project Goal: Develop a fast and label-efficient semi-supervised framework for accurate particle picking in 3D CryoET tomograms by effectively leveraging large-scale unlabeled data.
Methods: Built a 3D heatmap detector (asymmetric U-Net) for particle centers with a reweighted MSE loss to handle heavy class imbalance. Trained it with a teacher–student setup where the teacher is an EMA of the student and supplies pseudo labels on unlabeled tomograms. Stabilized pseudo labels using multi-view flips and averaging. Used a CryoET-tuned DropBlock as the strong aug, and max-pooling for fast peak finding.
Key techniques: 3D U-Net, Semi-supervised Learning, Heatmap Regression, Data Augmentation.
Publications: One paper has been accepted to ISBI 2026.

WORK EXPERIENCE

Research intern Advisor: Chen Bai
XPENG *May. 2025 – Nov. 2025*

Low-latency Trading System R&D Engineer Manager: Lijian Ge
Beijing ZhuoShi Private Equity Fund Management Co., Ltd. *Jul. 2020 – Apri. 2022*

Software engineer Manager: Ying Zhan
Weibo Corporation, Machine Learning Platform *Sep. 2019 – Jun. 2020*

Software engineer Manger: Yong Gui
Didi Global Inc., Machine Learning Platform *Feb 2018 – Aug. 2019*

Machine Learning Engineer Manger: Simin Li
Beijing Wecash Technology Co. *Jun. 2017 – Feb. 2018*

SELECTED AWARDS

Pratt Fellowship Award, Department of Computer Science, Virginia Tech, 2026–27 academic year.
Won first prize (ranked first) in the undergraduate research contest in the Department of Atmospheric and Oceanic Science, School of Physics, Peking University, Sep. 2016.
Won a Silver Medal for placing 34th of 931 in CZII - CryoET Object Identification.