Xinlei Chen

Associate Professor, Ph.D. Supervisor
Shenzhen International Graudate School, Tsinghua University
Director, **Artificial Intelligence of Things Group**
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Webpage: https://chen-xinlei.com/ *Google Citations:* **5062**, *H-index:* **41**, *i10-index:* **108**
Google scholar: https://scholar.google.com/citations?user=Dikeo0kAAAAJ

RESEARCH INTERESTS

Bio-inspired Sensing, World (Action) Model, VLN/VLM for UAV, AIoT, Cyber Physical System.

EDUCATION

Carnegie Mellon University, USA
Doctor of Philosophy in Electrical and Computer Engineering — May 2018
- Advisor: Professor Pei Zhang
- Thesis Title: *Spatiotemporal Relationship Aided Field Estimation & Route Planning for Large Scale Mobile Cyber Physical Systems*

Tsinghua University, China
Master of Science in Electronic Engineering — Jun 2012
- Advisor: Professor Depeng Jin
- **Excellent Master Thesis Award**

Tsinghua University, China
Bachelor of Engineering in Electronic Engineering — Jun 2009

MAJOR EXPERIENCE

Associate Professor, Ph.D. Supervisor, Principal Investigator — Jul 2024 – present
Institute of Data and Information
Shenzhen International Graduate School, Tsinghua University, China

Assistant Professor, Ph.D. Supervisor, Principal Investigator — Jun 2021 – Jun 2024
Institute of Data and Information/Tsinghua-Berkeley Shenzhen Institute
Shenzhen International Graduate School, Tsinghua University, China

Visiting Scholar — Apr 2021 – May 2021
Tsinghua-Berkeley Shenzhen Institute, Tsinghua University, China
Advisor: Professor Lin Zhang

Visiting Scholar, — Sep 2020 – Apr 2021
Global Innovation Exchange Institute, Tsinghua University, China
Advisor: Professor Yunhao Liu

Postdoctoral Research Associate — Jun 2018 – May 2020
Department of Electrical and Computer Engineering, Carnegie Mellon University, USA
Advisor: Professor Pei Zhang

ACADEMIC HONORS & AWARDS

Selected in Elsevier's World's Top 2% Scientists (Single-year Impact) — 2023–2026
Stanford/Elsevier

Runner-up for Best Paper Award — 2026
KDD (Dataset & Benchmarks Track)

Selected as the Cover Paper — 2026
Paper: STeP-Diff: Spatio-Temporal Physics-Informed Diffusion Models for Mobile Fine-Grained Pollution Forecasting
IEEE Transactions on Knowledge and Data Engineering (TKDE)

Outstanding Reviewer Award 2026
ACM SenSys

Best Paper Finalist 2026
IROS SeMaNa Workshop (Supervised Student Qiuyi Gu etc.)

Academic Rising Star Award 2026
Shenzhen International Graduate School, Tsinghua University (supervised student Nan Zhou)
(Highest academic honor for students in Tsinghua)

Silver Medal 2025
50th International Exhibition of Inventions of Geneva

Best Paper Award 2025
ICLR 2025 Workshop on Embodied Intelligence with LLM in Open City Environment

Best Paper Runner-up 2025
ACM UbiComp/ISWC PICASSO Workshop

Outstanding Scientific Research Innovation Award 2025
27th China Hi-Tech Fair (China's No.1 Technology Exhibition)

Outstanding Teacher of the Year 2023–2025
Shenzhen International Graduate School, Tsinghua University

Second Place 2025
ACM MobiCom Student Research Competition (Supervised Students Wenhua Ding)

Best Paper Award 2023
ACM UbiComp CPD Workshop

Best Paper Award 2022
ACM UbiComp CPD Workshop

National Overseas Early Career Award 2022
National Natural Science Foundation of China (NSFC)

Best Poster Award 2017
ACM/IEEE IPSN

Best Demo Award 2016
ACM SenSys

Best Poster Runner-up Award 2016
ACM SenSys

Dean's Fellowship 2013
Carnegie Mellon University

Excellent Master's Thesis Award 2012
Tsinghua University

TEACHING EXPERIENCES

Tsinghua University, China
Supervised 11 Ph.D. students, 40 Master students 2021-present

Instructor Fall 2023, 2024, 2025, 2026
- Course Topic: Introduction to Artificial Intelligence of Things (AIoT)
- Ranked in the **top 5%** of teaching evaluations university-wide (2024).

Instructor Spring 2024, 2025, 2026
- Course Topic: Interdisciplinary innovation practice-based course: low-altitude urban logistics
- Ranked in the **top 5%** of teaching evaluations university-wide (2025, 2026).

Instructor Spring 2022, 2023, 2024, 2025, 2026, Fall 2026
- Course Topic: Data Visualization
- Ranked in the **top 5%** of teaching evaluations university-wide (2025, 2026).

PROFESSIONAL ACTIVITIES

INSTITUTIONAL SERVICE

GuangDong Engineering Technology Research Center of Low-altitide Integrated Flight and Safe Evaluation
Deputy Director

CONFERENCE SERVICE

ACM MobiCom
Technical Program Committee Member 2027
TPC co-Chair, PICASSO Workshop 2024

ACM SenSys
Technical Program Committee Member 2025-2027
Web Chair 2018
Outstanding Reviewer Award 2026

Strategy Seminar of Low-Altitude Intelligent Technology, IDI Department of Tsinghua SIGS
General co-chair 2026

X-Lake Forum of The City of Shenzhen
General Co-Chair, Workshop on Low-Altitude Intelligent Technology 2025
General Co-Chair, Workshop on Sustainable Development Technology 2024

ACM BuildSys
Industrial Relation Chair 2024
Technical Program Committee Member 2024
Web Chair 2018

IEEE ITW
Financial co-Chairs 2024

ACM HotMobile
Technical Program Committee Member 2024

International Conference on Mobility, Sensing and Networking (MSN)
Technical Program Committee Member 2023

The 4th Tsinghua-Berkeley Shenzhen Institute (TBSI) Workshop on Learning Theory
General Chair 2022

IEEE ICPADS
IoT & CPS Track Chair 2024
Technical Program Committee Member 2021

ACM UbiComp
TPC Co-chair, CPD Workshop 2021
General Co-chair, CPD Workshop 2018-2020

CPS-IoT Week
Competition Co-chair 2020

IJCAI
Technical Program Committee Member 2019-2020

AAAI
Technical Program Committee Member 2019

JOURNAL SERVICE

Tsinghua Science and Technology
Associate Editor 2026-present

npj Engineering Intelligence
Guest Editor 2026

Signal, Image and Video Processing (Springer)
Associate Editor 2024-present

PRESENTATIONS AND TALKS

SELECTED PRESENTATIONS

T15 Invited Talk, “Bio-inspired Perception and Cognition for Large Scale Operation of UAV Swarms”, The 5th China Conference on Intelligent Sensing and Fusion, China Artificial Intelligence Association, Tianjing, China, 2026.

T14 Demo Show & Invited Talk, “Expand the Boundaries of Vision-based Perception for UAVs”, For NVIDIA Visiting Mission (4 departments), Shenzhen, China, 2026.

T13 Demo Show & Invited Talk, “Bio-inspired Perception for Low Latency Sudden Pedestrian Emergence Detection”, Toyota, Shenzhen, China, 2026.

T12 Demo Show & Invited Talk, “Enhance the Perception Capabilities of UAV with Stream-based Sensing”, For DJI Vice President, Shenzhen, China, 2025.

T11 Keynote Speech, “Bio-inspired Sensing and Perception for Autonomous Drone System”, PICASSO Workshop, ACM MobiCom, Hongkong, China, 2025.

T10 Demo Show, “Brain-Inspired Autonomous High-Speed Aerial Agent for Complex and Dynamic Environment”, 27th China Hi-Tech Fair, Shenzhen, China, 2025.

T9 Invited Talk, “Brain-inspired perception-based air-ground collaborative perception enhancement technology”, Shenzhen Smart City Technology Development Group Co., Ltd., Shenzhen, China, 2024.

T8 Demo Show & Invited Talk, “Stream Based Perception for UAV Operation in Extreme Environment”, For CEO of Prophesee(leading event camera company), Shenzhen, China, 2023.

T7 Invited Talk, “Explore the boundary of IoT: Collaborative sensing and scheduling for multi-agent system in large complex environment”, The Chinese University of Hong Kong (Shenzhen), Shenzhen, China, 2023.

T6 Invited Talk, “Collaborative Path Planning for Active Information Gathering with Multi-Robot System”, Southeast University, Nanjing, China, 2022.

T5 “CAP: Context-aware App Usage Prediction with Heterogeneous Graph Embedding”, ACM International Joint Conference on Pervasive and Ubiquitous Computing and Proceedings of the 2019 ACM International Symposium on Wearable Computers (Ubicomp), London, UK, 2019.

T4 “ASC: actuation system for city-wide crowdsensing with ride-sharing vehicular platform”, ACM Proceedings of the Fourth Workshop on International Science of Smart City Operations and Platforms Engineering, 2019.

T3 “DrunkWalk: Collaborative and Adaptive Planning for Navigation of Micro-Aerial Sensor Swarm”, ACM Conference on Embedded Networked Sensor Systems (SenSys), Seoul, South Korea, 2015.

T2 “A Heterogeneous High Speed Wireless Body Sensor Network Based on SC-UWB and ZIGBEE”, IEEE Global Telecommunications Conference, Houston, Texa, USA, 2011.

T1 “Channel modeling of UWB-Based Wireless Body Area Networks”, IEEE International Conference on Communications, Kyoto, Japan, 2011.

GRANTS

G15 Shenzhen Key R&D Program / Computable Element Extraction and Semantic Relationship Construction Technology for Full-Space Modeling, 2026-2027, **Role: PI**, 7.5M CNY (2.3M CNY).

G14 Shenzhen Key R&D Program / Full-Time and Full-Domain Adaptive Dynamic Perception Technology and Equipment System, 2026-2027, **Role: Co-PI**, 7M CNY (2M CNY).

G13 Shenzhen Key Industrial R&D Program for Sustainable Development / Integrated Space-Air-Ground Sensing for Ecological Monitoring and Anomaly Detection, 2026-2028, **Role: Co-PI**, 5M CNY (1M CNY).

G12 Shenzhen-Tsinghua Program for Fundamental and Frontier AI Research / Integrated Development and Testing Platform for Embodied Intelligence, 2026-2030, **Role: co-PI**, 1M CNY.

G11 AGIBOT / Autonomous Continual Learning for Robots, 2026-2027, **Role: PI**, 600K CNY.

G10 Tsinghua University-Meituan Joint Research Program / Detection of Submillimeter Obstacles with Event Cameras for UAV Safe Flying, 2026-2027, **Role: PI**, 200K CNY.

G9 Shenzhen Low-Altitude Economy Program / Foundation Model for Autonomous Coordination and Control of Low-Altitude UAV Swarms, 2025-2026, **Role: Co-PI**, 6M CNY (810K CNY).

G8 Tsinghua University-Meituan Joint Research Program / Robust UAV Perception and Localization in Challenging Environments Using Event Cameras, 2025-2026, **Role: PI**, 230K CNY.

G7 Tencent Collaborative Education Program / Foundations of AI Course Design: Reinforcement Learning for Intelligent Decision-Making, 2025-2026, **Role: PI**, 100K CNY.

G6 NSFC General Grant / Intelligent Sparse Sensing in Large-Scale Complex Environments, 2024-2027, **Role: PI**, 500K CNY.

G5 Tsinghua SIGS Cross-Disciplinary Research and Innovation Fund / Multi-Agent Collaborative Sensing for Fine-Grained Air Pollution Analysis, 2023-2025, **Role: PI**, 250K CNY (175K CNY).

G4 Guangdong Innovative and Entrepreneurial Research Team Program / Research on Human Body Area Network Based on Wearable Technology, 2022-2027, **Role: Co-PI**, 10M CNY (2M CNY).

G3 Overseas Early Career Award / Collaborative Sensing with Lightweight Multi-Agent Systems in Complex Environments, 2022-2024, **Role: PI**, 2M CNY.

G2 National Key R&D Program of China / Rapid Contraband Detection and Collaborative Sensing with Multiple Mobile Platforms in Complex Environments, 2022-2025, **Role: co-PI**, 3.4M CNY (1.3M CNY).

G1 Shenzhen Stabilization Support Program / Mean-Field Game-Based Collaborative Sensing in Multi-Agent Systems, 2022-2024, **Role: PI**, 600K CNY.

PUBLICATIONS

Refereed Journal Papers

(First, Co-First#, Corresponding Author*)

J32 Wang, H., Luo, X., Ding, W., Xu, J., Chen, X., Duan, R., Chen, J., Wang, C., Zhang, H., Zhou, Z., Liu, Y., **Xinlei Chen***. (2026). EV-Pose: Event Camera-Enhanced High-Frequency Visual Positioning Service for Accurate Drone Landing. *IEEE Transactions on Mobile Computing*. [IF=8.8]

J31 Zhou, N., Hong, W., Wang, H.*, Zheng, J., Wang, Q., Song, Y., Zhang, X. P., Li, Y., **Xinlei Chen***. (2026). STeP-Diff: Spatio-Temporal Physics-Informed Diffusion Models for Mobile Fine-Grained Pollution Forecasting. IEEE Transactions on Knowledge and Data Engineering. [IF=11.6] (**Cover Paper**)

J30 Cheng, Y., Chen, X., Yang, Y., Wang, H., Xu, J., Hong, C., Xu, S., Zhang, X. P., Liu, Y., **Xinlei Chen***. (2026). SniffySquad: Patchiness-aware gas source localization with multi-robot collaboration. ACM Transactions on Sensor Networks, 22(2), 1-27. [IF=4.7]

J29 Li, K., Zheng, S., Xiu, L., Sheng, Y., Zhang, X. P., Huang, D.*, **Xinlei Chen***. (2026). SCOPE: Skeleton Graph-Based Computation-Efficient Framework for Autonomous UAV Exploration. IEEE Robotics and Automation Letters. [IF=5.3]

J28 Xu, Y., Zha, J., Hong, W., Yi, X., Chen, G., Zheng, J., Hsia, CC., **Xinlei Chen***. (2026). Scalable UAV multi-hop networking via multi-agent reinforcement learning with large language models. IEEE Transactions on Mobile Computing. [IF=8.8]

J27 Zhou, N.#, Li, Z.#, Man, F., Chen, X., Xu, S., Dang, F., Hong, C., Liu, Y., Zhang, X.P., **Xinlei Chen***. (2026). QUIDS: Quality-Informed Incentive-Driven Multiagent Dispatching System for Mobile Crowdsensing. *IEEE Internet of Things Journal*, 13(8), 15235–15249. [IF=8.7]

J26 Wang, H., Xu, J., Luo, X., Zhang, T., Chen, X., Duan, R., Liu, Y., Zheng, J., Hong, W., Ji, X., Tang, Y., **Xinlei Chen***. (2026). mme-loc: Facilitating accurate drone landing with ultra-high-frequency localization. IEEE Transactions on Mobile Computing. [IF=8.8]

J25 Zha, J., Ren, J., Cheng, Y., Yu, S., Chen, G., Li, Z., Xu, Y., Xiao, Z., Dang, F., Tang, Y., Ma, W., Wang, G., Xu, S., **Xinlei Chen***. (2026). Large-Scale UAV Swarm Coordination for Sensing and Communication: A Spatiotemporal Perspective. *ACM Computing Surveys*, 58(13), Article 335, 1–38. [IF=30.4]

J24 Zhao, C.#, Xu, J.#, Ruan, C.#, Wang, H., Wang, S., Li, J., Zha, J., Hong, W., Yang, Z., Liu, Y., Zhang, X.P., **Xinlei Chen***. (2026). Flight Dynamics to Sensing Modalities: Exploiting Drone Ground Effect for Accurate Edge Detection. *IEEE Transactions on Mobile Computing*, 25(11), 18983–19000. [IF=8.8]

J23 Wang, H., Guo, R., Ma, P., Ruan, C., Luo, X., Ding, W., Zhong, T., Xu, J., Liu, Y., **Xinlei Chen***. (2026). Event camera meets mobile embodied perception: abstraction, algorithm, acceleration, application. ACM Computing Surveys, 58(8), 1-41. [IF=30.4]

J22 Zha, J., Zhao, C., Zhou, N., Liu, Z., Sun, T., Zhang, B., Zhang, X.*, **Xinlei Chen***. (2026). Breaking the Communication-Accuracy Trade-Off: A Sparsified Information Diffusion Framework for Multi-Agent Collaborative Perception. *IEEE Transactions on Mobile Computing*, 25(9), 14834–14848. [IF=8.8]

J21 Luo, J., Xiao, Z., Li, Z., Chen, X., Hong, C., Zhang, X. P., **Xinlei Chen*** (2025). SmartSpr: A Physics-informed Mobile Sprinkler Scheduling System for Reducing Urban Particulate Matter Pollution. IEEE Transactions on Mobile Computing. [IF=8.8]

J20 Shi, R., Luo, J., Zhou, N., Liu, Y., Hong, C., Zhang, X. P., **Xinlei Chen***. (2025). Phy-APMR: A physics-informed air pollution map reconstruction approach with mobile crowd-sensing for fine-grained measurement. Building and Environment, 272, 112634. [IF=8.4]

J19 Gu, Q., Ye, Z., Yu, J.*, Tang, J., Yi, T., Dong, Y., Wang, J., Cui, J., **Xinlei Chen***, Wang, Y. (2025). MR-COGraphs: Communication-efficient Multi-Robot Open-vocabulary Mapping System via 3D Scene Graphs. IEEE Robotics and Automation Letters. [IF=5.3]

J18 Zhou, N., Liu, Y., Wang, H., Man, F., Xu, J., Dang, F., Hong, C., Liu, Y., Zhang, XP., Song, Y., Wang, Q., **Xinlei Chen***. (2025). CatUA: Catalyzing Urban Air Quality Intelligence through Mobile Crowd-sensing. IEEE Transactions on Mobile Computing. [IF=8.8]

J17 Wang, H., Xu, J., Zhao, C., Cheng, Y., Chen, X., Hong, C., Zhang, X. P., Liu, Y., **Xinlei Chen***. (2025). Aerial shepherds: Enabling hierarchical localization in heterogeneous mav swarms. IEEE Transactions on Mobile Computing. [IF=8.8]

J16 Chen, X., Xiao, Z., Cheng, Y., Hsia, C.C., Wang, H., Xu, J., Xu, S., Dang, F., Zhang, X.P., Liu, Y., **Xinlei Chen***. (2024). SOScheduler: Toward Proactive and Adaptive Wildfire Suppression via Multi-UAV Collaborative Scheduling. *IEEE Internet of Things Journal*, 11(14), 24858–24871. [IF=8.7]

J15 Zhao, B.#, Wang, X.#, Zhang, T., Shi, R., Xu, F., Man, F., Chen, E., Li, Y., Li, Y., Sun, T., **Xinlei Chen***. (2024). Estimating and modeling spontaneous mobility changes during the COVID-19 pandemic without stay-at-home orders. *Humanities and Social Sciences Communications*, 11, Article 591. [IF=4.8]

J14 Chen, X., Wang, H., Cheng, Y., Fu, H., Liu, Y., Dang, F., Liu, Y., Cui, J., **Xinlei Chen***, 2024. DDL: Empowering Delivery Drones with Large-scale Urban Sensing Capability. IEEE Journal of Selected Topics in Signal Processing, 18(3), pp. 502–515. [IF=8.5]

J13 Jian, Z., Liu, Z., Shao, H., Wang, X.*, **Xinlei Chen*** and Liang, B., 2023. Path Generation for Wheeled Robots Autonomous Navigation on Vegetated Terrain. IEEE Robotics and Automation Letters. [IF=5.3]

J12 Wang, Z., Hu, C., Zheng, D.* and **Xinlei Chen***, 2021. Ultralow-power sensing framework for internet of things: A smart gas meter as a case. IEEE Internet of Things Journal, 9(10), pp.7533-7544. [IF=8.7]

J11 Na, R., Zheng, D., Sun, Y., Han, M., Wang, S., Zhang, S., Hui, Q., **Xinlei Chen***, Zhang, J. and Hu, C.*, 2021. A wearable low-power collaborative sensing system for high-quality SSVEP-BCI signal acquisition. IEEE Internet of Things Journal, 9(10), pp.7273-7285. [IF=8.7]

J10 **Xinlei Chen#***, Xu, S.#, Han, J., Fu, H., Pi, X., Joe-Wong, C., Li, Y., Zhang, L., Noh, H.Y. and Zhang, P., 2020. PAS: Prediction-Based Actuation System for City-Scale Ridesharing Vehicular Mobile Crowdsensing. *IEEE Internet of Things Journal*, 7(5), pp.3719-3734. [IF=8.7]

J9 **Xinlei Chen***, Ruiz, C., Zeng, S., Gao, L., Purohit, A., Carpin, S. and Zhang, P., 2020. H-DrunkWalk: Collaborative and Adaptive Navigation for Heterogeneous MAV Swarm. *ACM Transactions on Sensor Networks (TOSN)*, 16(2), pp.1-27. [IF=4.7]

J8 **Xinlei Chen#***, Xu, S.#, Liu, X., Xu, X., Noh, H.Y., Zhang, L. and Zhang, P., 2020. Adaptive Hybrid Model-enabled Sensing System (HMSS) for Mobile Fine-Grained Air Pollution Estimation. IEEE Transactions on Mobile Computing, 21(6), pp.1927-1944. [IF=8.8]

J7 **Xinlei Chen***, Zhao, Y. and Li, Y., 2019. Qoe-aware wireless video communications for emotion-aware intelligent systems: A multi-layered collaboration approach. *Information Fusion*, 47, pp.1-9. [IF=17.4]

J6 Xu, S.#, **Xinlei Chen#***, Pi, X., Joe-Wong, C., Zhang, P. and Noh, H.Y., 2019. iLOCuS: Incentivizing vehicle mobility to optimize sensing distribution in crowd sensing. *IEEE Transactions on Mobile Computing*, 19(8), pp. 1831-1847. [IF=8.8]

J5 **Xinlei Chen***, Wang, Y., He, J., Pan, S., Li, Y. and Zhang, P., 2019. Cap: Context-aware app usage prediction with heterogeneous graph embedding. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies*, 3(1), pp.1-25. [IF=6.2]

J4 **Xinlei Chen***, Zhao, Y., Li, Y., Chen, X., Ge, N. and Chen, S., 2018. Social trust aided D2D communications: Performance bound and implementation mechanism. *IEEE Journal on Selected Areas in Communications*, 36(7), pp.1593-1608. [IF=16.8]

J3 Liu, Y.#, **Xinlei Chen#**, Niu, Y., Ai, B., Li, Y.* and Jin, D., 2018. Mobility-aware transmission scheduling scheme for millimeter-wave cells. *IEEE Transactions on Wireless Communications*, 17(9), pp.5991-6004. [IF=10.3]

J2 **Xinlei Chen***, Zhu, Z., Chen, M. and Li, Y., 2018. Large-scale mobile fitness app usage analysis for smart health. *IEEE Communications Magazine*, 56(4), pp.46-52. [IF=8.3]

J1 **Xinlei Chen***, Purohit, A., Pan, S., Ruiz, C., Han, J., Sun, Z., Mokaya, F., Tague, P. and Zhang, P., 2017. Design experiences in minimalistic flying sensor node platform through sensorfly. *ACM Transactions on Sensor Networks (TOSN)*, 13(4), pp.1-37. [IF=4.7]

Refereed Conference Papers
(First, Co-First#, Corresponding Author*)

C44 Zhang, W., Tang, P., Zeng, X., Man, F., Yu, S., Dai, Z., Zhao, B., Chen, H., Shang, Y., Wu, W., Gao, C.*, **Xinlei Chen***, Wang, X., Li, Y., Zhu, W. (2026). Aerial World Model for Long-horizon Visual Generation and Navigation in 3D Space. *ACM International Conference on Multimedia (ACM MM)*. (CCF-A)

C43 Zhao, B., Xu, J., Feng, W., Zhang, X., Wang, Z., Wang, H., Ji, S., Wang, Z., Fang, J., Zheng, Z., Zhang, W., Shang, Y., Wu, W., Gao, C.*, **Xinlei Chen***, Li, Y.. (2026). WorldVLN: Autoregressive World Action Model for Aerial Vision-Language Navigation. *Neural Information Processing Systems (NeurIPS)*. . (CCF-A; CSRankings: Machine Learning)

C42 Chen, X.#, Shi, Y.#, Li, K.#, Wang, H., Li, Y., Gu, X., **Xinlei Chen***, Lin, M.*. (2026). Progressive Supernet Training for Efficient Visual Autoregressive Modeling. *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 37950–37959. (CCF-A; CSRankings: Computer Vision)

C41 Fang, J., Lei, Y., Wan, Q., Wang, Z., Huang, Y., Xu, Y., Zhao, B., Zhang, W., Gao, C.*, **Xinlei Chen***, Li, Y.*. (2026). iWorld-Bench: A Benchmark for Interactive World Models with a Unified Action Generation Framework. *International Conference on Machine Learning (ICML)*. . (CCF-A; CSRankings: Machine Learning)

C40 Zhao, B.#, Wang, Z.#, Fang, J.#, Zhou, Z., Xu, Y., Ji, Y., Xu, J., Zhang, Q., Zhang, W., Gao, C.*, **Xinlei Chen***. (2026). How Far Are Large Multimodal Models from Human-Level Spatial Action? A Benchmark for Goal-Oriented Embodied Navigation in Urban Airspace. *Proceedings of the 32nd ACM SIGKDD Conference on Knowledge Discovery and Data Mining V.2 (KDD)*, 2, 10326–10337. (CCF-A; CSRankings: Machine Learning)

C39 Zhou, N., Wang, H., Li, J., Li, H., Song, Y., Wang, Q., Li, Y., **Xinlei Chen***. (2026). FireSentry: A Multi-Modal Spatio-temporal Benchmark Dataset for Fine-Grained Wildfire Spread Forecasting. The 32nd ACM SIGKDD Conference on Knowledge Discovery and Data Mining. (CCF-A; CSRankings: Machine Learning) (**Runner-up for Best Paper Award of Dataset & Benchmarks Track**)

C38 Ma, P., Zhou, Z., Ruan, C., Wang, H., Li, K., Gong, Z., Ding, W., Gao, C.*, Xu, J., **Xinlei Chen***. (2026). EventPrune: Cascaded Event-Assisted Token Pruning for Efficient First-Person Dynamic Spatial Reasoning. *Advances in Neural Information Processing Systems (NeurIPS)*. . (CCF-A; CSRankings: Machine Learning)

C37 Li, J., Li, K., Gao, C.*, Li, Y., **Xinlei Chen***. (2026). EgoPrune: Efficient Token Pruning for Egomotion Video Spatial Reasoning in Embodied Agents. *IEEE International Conference on Multimedia and Expo (ICME)*.

C36 Zha, J., Fan, Y., Li, K., Li, H., Gao, C.*, **Xinlei Chen***. (2026). DIMM: Decoupled Multi-hierarchy Kalman Filter via Reinforcement Learning. *Proceedings of the AAAI Conference on Artificial Intelligence*, 40(22), 18746–18754. (CCF-A; CSRankings: Artificial Intelligence)

C35 Chen, X., Xu, J., Ding, W., Wang, H., Luo, X., Duan, R., Chen, J., Wang, X., Liu, Y., **Xinlei Chen***. (2026). Count every rotation and every rotation counts: Exploring drone dynamics via propeller sensing. ACM/IEEE International Conference on Embedded Artificial Intelligence and Sensing Systems. (CSRankings: Mobile Computing)

C34 Zha, J., Fan, Y., Zhang, T., Chen, G., Chen, Y., Gao, C.*, **Xinlei Chen***. (2026, March). Aircopbench: A benchmark for multi-drone collaborative embodied perception and reasoning. In Proceedings of the AAAI Conference on Artificial Intelligence (Vol. 40, No. 2, pp. 1507-1515). (CCF-A; CSRankings: Artificial Intelligence)

C33 Guo, R., Ruan, C., Wang, H., Gong, Z., Xu, J., **Xinlei Chen***. (2026). x^2-Fusion: Cross-Modality and Cross-Dimension Flow Estimation in Event Edge Space. *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*. . (CCF-A; CSRankings: Computer Vision)

C32 Zhao, B., Fang, J., Dai, Z., Wang, Z., Zha, J., Zhang, W., Gao, C.*, Wang, Y., Cui, J., **Xinlei Chen***, Li, Y. (2025). Urbanvideo-bench: Benchmarking vision-language models on embodied intelligence with video data in urban spaces. The 63rd Annual Meeting of the Association for Computational Linguistics. (CCF-A; CSRankings: Natural Language Processing)

C31 Wang, H., Xu, J., Luo, X., Chen, X., Zhang, T., Duan, R., Liu, Y., **Xinlei Chen***. (2025, May). Ultra-high-frequency harmony: mmwave radar and event camera orchestrate accurate drone landing. In Proceedings of the 23rd ACM Conference on Embedded Networked Sensor Systems (pp. 15-29). (CSRankings: Mobile Computing)

C30 Ruan, C., Guo, R., Gong, Z., Xu, J., Yang, W., **Xinlei Chen***. (2025). PRE-Mamba: A 4D State Space Model for Ultra-High-Frequent Event Camera Deraining. *Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV)*, 9169–9180. (CCF-A; CSRankings: Computer Vision)

C29 Zhang, W., Zhou, Z., Zeng, X., Liu, X., Fang, J., Gao, C.*, Cui, J., Li, Y., **Xinlei Chen***, Zhang, X. P. (2025, October). Open3d-vqa: A benchmark for embodied spatial concept reasoning with multimodal large language model in open space. In Proceedings of the 33rd ACM International Conference on Multimedia (pp. 12784-12791). (CCF-A)

C28 Zha, J., Fan, Y., Yang, X., Gao, C.*, **Xinlei Chen***. (2025). How to Enable LLM with 3D Capacity? A Survey of Spatial Reasoning in LLM. *Proceedings of the Thirty-Fourth International Joint Conference on Artificial Intelligence (IJCAI), Survey Track*, 10817–10825. (CSRankings: Artificial Intelligence)

C27 Ding, W., Zhang, Z., Xu, X., Wang, H., Zhu, Y., Ji, S., Zhou, X., Xu, J., Huang, D., **Xinlei Chen***. (2025, November). Hawkeye: Practical in-flight obstacle avoidance with event camera and lidar fusion. In Proceedings of the 31st Annual International Conference on Mobile Computing and Networking (pp. 1213-1215). (**Second Place, ACM MobiCom Student Research Competition**)

C26 Sun, Y., Luo, X., Zhong, T., Ding, W., Chen, J., Duan, R., Hong, W., **Xinlei Chen***. (2025). Event-IR: Microsecond-Level UAV Landing via Event Camera and Stroboscopic Infrared Marker. *Companion of the 2025 ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp Companion)*, 1364–1369.

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