SHIJIE LIN

Ph.D. in Robotics
Cofounder of vizguard.ai

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EDUCATION

09/2020–Now	**Ph.D. in Robotics**	**The University of Hong Kong**

Advisor: Prof. Jia Pan, Wenping Wang and Yifan (Evan) Peng (Since 2024)
Thesis: Real-time Computational Neuromorphic Vision for Robotics
Awarded HKU Dissertation Year Fellowship

09/2017–06/2019	**M.E. in Electronics Communication Engineering**	**Wuhan University**

Advisor: Prof. Wen Yang
Awarded National Scholarship for Postgraduate
Thesis: Development of an Intelligent UAV System for Tunnel Inspection

09/2013–06/2017	**B.S in Electronics and Information Engineering**	**Sichuan University**

Thesis: Pedestrian Detection Under UAV Perspective

ACADEMIC POSITIONS

09/2020–11/2025	**Research and Teaching Assistant (PhD student)**	**The University of Hong Kong**
05/2024–05/2025	**Research Associate**	**InnoHK Centre for Transformative Garment Production**
09/2019–07/2020	**Research Assistant**	**The University of Hong Kong**

JOURNAL ARTICLES

[J1] W. Xing, S. Lin, L. Yang, Z. Zhang, Y. Du, M. Lei, Y. Pan, J. Pan, "EROAM: Event-based Camera Rotational Odometry and Mapping in Real-time", *IEEE Transactions on Robotics*, 2026.

[J2] R. Han, S. Wang, S. Wang, Z. Zhang, J. Chen, S. Lin, C. Li, C. Xu, Y.C. Eldar, "Neupan: Direct point robot navigation with end-to-end model-based learning", *IEEE Transactions on Robotics*, 2025.

[J3] S. Lin, G. Zheng, Z. Wang, R. Han, W. Xing, Z. Zhang, Y. Peng, J. Pan, "Embodied neuromorphic synergy for lighting-robust machine vision to see in extreme bright", *Nature Communications 15(1)*, 10781, 2024.

[J4] S. Lin, X. Zhang, L. Yang, L. Yu, B. Zhou, X. Luo, W. Wang, J. Pan, "Neuromorphic Synergy for Video Binarization", *IEEE Transactions on Image Processing*, 2024.

[J5] S. Lin, F. Xu, X. Wang, W. Yang, L. Yu, "Efficient spatial-temporal normalization of SAE representation for event camera", *IEEE Robotics and Automation Letters 5(3)*, 4265-4272, 2020.

[J6] X. Wang, Y. Du, S. Lin, P. Cui, Y. Shen, Y. Yang, "adVAE: A self-adversarial variational autoencoder with Gaussian anomaly prior knowledge for anomaly detection", *Knowledge-Based Systems 190*, 105187, 2020.

[J7] F. Xu, W. Yang, T. Jiang, S. Lin, H. Luo, G.S. Xia, "Mental retrieval of remote sensing images via adversarial sketch-image feature learning", *IEEE Transactions on Geoscience and Remote Sensing 58(11)*, 7801-7814, 2020.

[J8] W. Xing, S. Lin, L. Yang, J. Pan, "Target-free extrinsic calibration of event-lidar dyad using edge correspondences", *IEEE Robotics and Automation Letters 8(7)*, 4020-4027, 2023.

[J9] S. Lin, J. Wang, R. Peng, W. Yang, "Development of an autonomous unmanned aerial manipulator based on a real-time oriented-object detection method", *Sensors 19(10)*, 2396, 2019.

CONFERENCE ARTICLES

[C1] S. Lin, Y. Zhang, L. Yu, B. Zhou, X. Luo, J. Pan, "Autofocus for event cameras", *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2022. **Oral Presentation**

[C2] S. Lin, Y. Zhang, D. Huang, B. Zhou, X. Luo, J. Pan, "Fast event-based double integral for real-time robotics", *2023 IEEE International Conference on Robotics and Automation (ICRA)*, 796-803,

2023.

[C3] W. Xing, S. Lin, G. Zheng, Y. Du, J. Pan, "Simultaneous Synchronization and Calibration for Wide-baseline Stereo Event Cameras", *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2025.

[C4] G. Zheng, S. Lin, Haobo Zuo, Si Si, Ming-Shan Wang, Changhong Fu, Jia Pan, "Lattice Boltzmann Model for Learning Real-World Pixel Dynamicity", *Advances in Neural Information Processing Systems (NeurIPS)*, 2025.

[C5] G. Zheng, S. Lin, H. Zuo, C. Fu, J. Pan, "Nettrack: Tracking highly dynamic objects with a net", *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2024.

[C6] W. Liao, X. Zhang, L. Yu, S. Lin, W. Yang, N. Qiao, "Synthetic aperture imaging with events and frames", *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2022.

[C7] Y. Lu, S. Lin, G. Chen, J. Pan, "ModLaNets: learning generalisable dynamics via modularity and physical inductive bias", *International Conference on Machine Learning (ICML)*, 14384-14397, 2022. **Long Presentation**

PATENTS

[P1] J. Pan, S. Lin, "Event-based auto-exposure for digital photography", *WO2023025185A1*, 2023. Link

TECHNICAL PAPERS

[T1] S. Lin, J. Wang, W. Yang, G. Xia, "Toward autonomous rotation-aware unmanned aerial grasping", *arXiv preprint arXiv:1811.03921*, 2018.

[T2] S. Lin, W. Yang, L. Yu, D. Dai, G. Xia, "Matching neuromorphic events and color images via adversarial learning", *arXiv preprint arXiv:2003.00636*, 2020.

[T3] Z. Zhang, R. Jia, Y. Yan, R. Han, S. Lin, Q. Jiang, L. Zhang, J. Pan, "Grains: Proximity sensing of objects in granular materials", *arXiv preprint arXiv:2307.05935*, 2023.

[T4] Z. Zhang, R. Jia, Y. Yan, R. Han, S. Lin, Q. Jiang, L. Zhang, J. Pan, "A haptic-based proximity sensing system for buried object in granular material", *arXiv preprint arXiv:2411.17083*, 2024.

ENTREPRENEURSHIP

• **Synloop**: A visual intelligence platform for builders using 360 panorama cameras; as of Feb 2026, it has served 10+ construction projects.

AWARDS

• HKU Dissertation Year Fellowship	2025
• Gold Medal and TOP 20 BEST INVENTION AWARDS in iCAN 2024	2024
• Silver Medal of Geneva International Exhibition of Inventions 2024	2024
• The Arthur and Louise May Memorial Fund Scholarship	2023
• The Arthur and Louise May Memorial Fund Scholarship	2022
• National Scholarship for Postgraduate (Top 1%)	2018
• First Prize, Postgraduate Academic Scholarship of Wuhan University (Top 5%)	2018
• First Prize, Postgraduate Academic Scholarship of Wuhan University (Top 5%)	2017
• First Prize, Postgraduate Entrance Scholarship of Wuhan University (Top 5%)	2017
• First Prize, Outstanding Scholarship of Sichuan University (Top 5%)	2016

- First Prize, Individual Scholarship of Sichuan University (Top 8%)   2015

INTERNATIONAL COMPETITIONS

- **National Postgraduate Electronic Design Competition**, First Prize, Team Leader (Top 0.2%) 2018
- **ICRA2018 DJI Robomaster AI Challenge**, Global Ranking: 6/70, Team Leader   2018
- **Microsoft Imagine Cup**, First Prize, Team Leader (Top 1%)   2016
- **National Undergraduate Electronic Design Competition**, First Prize (Top 1%)   2015

SERVICE

- **Journal Reviewer:**
  - IEEE Transactions of Robotics (T-RO)
  - IEEE Transactions of Pattern Analysis and Machine Intelligence (TPAMI)
  - IEEE Transactions on Image Processing (TIP)
  - IEEE Robotics and Automation Letters (RA-L), IEEE RAS Young Reviewers
- **Conference Reviewer:**
  - IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)
  - European Conference on Computer Vision (ECCV)
  - IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)
  - IEEE International Conference on Robotics and Automation (ICRA)
  - IEEE International Conference on Robotics and Biomimetics (ROBIO)
  - International Conference on Machine Learning (ICML)
- **Teaching:** COMP3270 Artificial Intelligence   2023 Fall
- **Invited Talks & Presentations:**
  - International Congress of Basic Science (ICBS), Beijing, China, Jul 13–25, 2025: "Embodied Neuromorphic Synergy for Lighting-robust Machine Vision to See in Extreme Bright"
  - Tsinghua University Invited Talk, Jul 16, 2025 (hosted by Prof. Muyuan Yang): "Neuromorphic Synergy for Lighting-robust Machine Vision to See in Extreme Bright"
  - The 8th Micro-Nano Optics Technology and Applications Symposium & PhotoniX Forum 2024, Shanghai, China, Oct 17–21, 2024: "Neuromorphic Intelligence for Machine Vision Applications under Extreme Illumination"
  - IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), New Orleans, LA, USA, Jun 21–24, 2022: "Autofocus for Event Camera"

GRANT

- National Key R&D Program (Mainland-Hong Kong Joint Funding): Intelligent 3D Acquisition and Reconstruction of Image-Event Stream Multimodal Fusion for Complex Dynamic Scenes, Jan 2025–Present, HKD 4.4 million, in progress, participant.

- Collaborative Research Fund (CRF), RGC Ref No. C1073-24GF: Advancing Shared Autonomy: Innovating Collaborative and Sensory Interfaces for Future Teleoperation Systems, Jun 2024–Present, HKD 6 million, in progress, participant.

- Innovation and Technology Commission of HKSAR, TransGP@InnoHK Initiative – Pillar 3: High-speed, Low-latency Acquisition Platform Using Neuromorphic-enhanced Vision System, May 2022–Oct 2025, HKD 400 million, completed, participant.

- ITC Innovation and Technology Fund, GHP/126/21GD: Autonomous Mobile Robotic Sprayer System for Precise Pest Control in Outdoor Scenarios, Jul 2023–Jun 2025, HKD 1 million, completed, participant.