

Bangyan Liao

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Education

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| Hunan University, BS in Automation. | Sept 2019 – June 2023 |
| Westlake University & Zhejiang University (Joint Program), PhD in Computer Science and Technology. Advisor: Prof. Peidong Liu. | Sept 2023 – June 2028 (expected) |

Research Interests

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|---|-------------|
| Multi-view Geometry Problems in 3D Computer Vision | 2023 - 2024 |
| Optimization : | 2023 - |
| Globally Optimal Outlier-Robust Optimization | |
| Learning to Globally Optimal Optimize | |
| Learning to Transport, Inference and Control Probability Path Measures : | 2024 - |
| [Transport] Optimal Transport / Schrödinger Bridge | |
| [Control] Stochastic Optimal Control / Mean-Field Control | |
| [Inference] Nonlinear Smoothing / Filtering | |

Publications

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| scDFM: Distributional Flow Matching Model for Robust Single-Cell Perturbation Prediction | 2026 |
| C Yu*, C Wang*, B Liao , T Wu | |
| International Conference on Learning Representations (ICLR) | |
| Neural Predictor-Corrector: Solving Homotopy Problems with Reinforcement Learning | 2026 |
| J Mai*, B Liao *, Z Zhao, Y Zeng, H Li, J Civera, T Wu, Y Zhou, P Liu, | |
| International Conference on Learning Representations (ICLR) | |
| E-MoFlow: Learning Egomotion and Optical Flow from Event Data via Implicit Regularization | 2025 |
| W Li*, B Liao *, Z Yi, Q Xu, P Wu, P Liu, | |
| Advances in Neural Information Processing Systems (NeurIPS) | |
| DaCapo: Score Distillation as Stacked Bridge for Fast and High-quality 3D Editing | 2025 |
| Y Huang, B Liao , Y Hu, H Lin, L Wu, S Li, C Tan, Z Liu, Y Liu, Z Zang, C Yu, Z Lei | |
| Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) | |
| Convex Relaxation for Robust Vanishing Point Estimation in Manhattan World | 2025 |
| B Liao *, Z Zhao*, H Li, Y Zhou, Y Zeng, H Li, P Liu | |
| Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) | |
| [Full Score] [Oral][Award Candidate] | |
| EvTTC: An Event Camera Dataset for Time-to-Collision Estimation | 2025 |
| K Sun*, J Li*, K Dai, B Liao , W Xiong, Y Zhou | |
| IEEE Robotics and Automation Letters (IEEE RAL) | |
| Ego-motion Estimation for Vehicles with a Rolling Shutter Camera | 2024 |
| Y Zhang, B Liao , D Qu, J Wu, X Lu, W Li, Y Xue, Y Lao | |
| IEEE Transactions on Intelligent Vehicles (IEEE TIV) | |
| RSL-BA: Rolling Shutter Line Bundle Adjustment | 2024 |
| Y Zhang*, B Liao *, Y Xue, C Lu, P Liu, Y Lao | |
| European Conference on Computer Vision (ECCV) | |
| GlobalPointer: Large Scale Plane Adjustment with Bi-Convex Relaxation | 2024 |
| B Liao *, Z Zhao*, L Chen, H Li, D Cremers, P Liu | |

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| European Conference on Computer Vision (ECCV) | |
| Motion and Structure from Event-based Normal Flow | 2024 |
| Z Ren*, B Liao *, D Kong, J Li, P Liu, L Kneip, G Gallego, Y Zhou | |
| European Conference on Computer Vision (ECCV) | |
| Event-Aided Time-to-Collision Estimation for Autonomous Driving | 2024 |
| J Li*, B Liao *, X Lu, P Liu, S Shen, Y Zhou | |
| European Conference on Computer Vision (ECCV) | |
| USB-NeRF: Unrolling Shutter Bundle Adjusted Neural Radiance Fields | 2024 |
| M Li*, P Wang*, L Zhao, B Liao , P Liu | |
| International Conference on Learning Representations (ICLR) | |
| Fast Rolling Shutter Correction in the Wild | 2023 |
| D Qu*, B Liao *, H Zhang, O Ait-Aider, Y Lao | |
| IEEE Transactions on Pattern Analysis and Machine Intelligence (IEEE TPAMI) | |
| Revisiting Rolling Shutter Bundle Adjustment: Toward Accurate and Fast Solution | 2023 |
| B Liao *, D Qu*, Y Xue, H Zhang, Y Lao | |
| Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) | |

Experience

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| Visiting Student , AI4S Lab, Westlake University | Feb 2025 – |
| <ul style="list-style-type: none"> Advisor: Prof. Tailin Wu. Researched at fundamental machine learning algorithm. | |
| Visiting Student , Prof. Lao's Lab, Hunan University | Apr 2021 – June 2023 |
| <ul style="list-style-type: none"> Advisor: Prof. Yizhen Lao. Researched at novel fundamental geometric and optimization solvers on Rolling Shutter camera. Resulted in IEEE TPAMI and CVPR 2023 paper. | |
| Visiting Student , NAIL, Hunan University | Nov 2021 – June 2023 |
| <ul style="list-style-type: none"> Advisor: Prof. Yi Zhou. Researched at novel fundamental geometric and optimization solvers on Event camera. Built and developed a vehicle forward warning software and hardware system with Event camera. Resulted in two ECCV 2024 papers. | |

Awards

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| CVPR 2025 Award Candidate (15/13008 submissions) | Aug 2025 |
| National Scholarship | Oct 2025 |
| National Natural Science Foundation of China (NSFC) PhD Program | Dec 2025 |

Student Mentoring

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| Yingping Zeng | Aug 2024 - |
| <ul style="list-style-type: none"> co-supervised master student with Prof. Yi Zhou from Hunan University | |
| Hao Li | Oct 2024 - Apr 2025 |
| <ul style="list-style-type: none"> visiting undergraduate student from Shandong University | |
| Zhisheng Song | Sep 2024 - |
| <ul style="list-style-type: none"> visiting undergraduate student from Shandong University | |

Reviewing

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| The IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR) | 2023 - |
| The International Conference on Computer Vision Conference (ICCV) | 2024 - |
| The AAAI Conference on Artificial Intelligence (AAAI) | 2024 - |
| The ACM Multimedia (ACM MM) | 2025 - |
| The International Conference on 3D Vision (3DV) | 2024 - |
| The IEEE International Conference on Robotics and Automation (ICRA) | 2024 - |
| The IEEE Robotics and Automation Letters (RAL) | 2024 - |
| The Conference on Neural Information Processing Systems (NeurIPS) | 2025 - |
| International Conference on Learning Representations (ICLR) | 2025 - |

Skills

Languages: IELTS: 6.5 CET-4: 623 CET-6: 490

Programming: C/C++, Python, Matlab