

Bangyan Liao

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Education

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

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

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	

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

Visiting Student, AI4S Lab, Westlake University

Feb 2025 –

- Advisor: Prof. Tailin Wu.
- Researched at fundamental machine learning algorithm.

Visiting Student, Prof. Lao's Lab, Hunan University

Apr 2021 – June 2023

- 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

- 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

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

Yingping Zeng

Aug 2024 -

- co-supervised master student with Prof. Yi Zhou from Hunan University

Hao Li

Oct 2024 - Apr 2025

- visiting undergraduate student from Shandong University

Zhisheng Song

Sep 2024 -

- visiting undergraduate student from Shandong University

Reviewing

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