

申請人提出俯視圖感知融合技術，解決多傳感器輸入與複雜場景下的統一表徵問題，其作為共一的 BEVFormer 工作促進了多視角三維重建和俯視圖感知發展。下表為國內主流自動駕駛公司受到俯視圖感知研究啟發，衍生出的相關的學術文章（統計截止於 2023 年 3 月，並以論文第一署名機構確定論著歸屬）。

俯視圖感知工作相關衍生（後續）論著

機構	相關工作（題目、時間年月、（會議期刊信息，如有））
1 NVIDIA, USA	M <sup>2</sup> BEV: Multi-Camera Joint 3D Detection and Segmentation with Unified Bird's-Eye View Representation, 22.04
2 Qualcomm, USA	X-Align: Cross-Modal Cross-View Alignment for Bird's-Eye-View Segmentation, 22.10, WACV
3 Bosch, Germany	SemanticBEVFusion: Rethink LiDAR-Camera Fusion in Unified Bird's-Eye View Representation For 3D Object Detection, 22.12
4 Valeo, France	LaRa: Latents and Rays for Multi-Camera Bird's-Eye-View Semantic Segmentation, 22.06, CORL
5 Motional, USA	3M3D: Multi-view, Multi-path, Multi-representation for 3D Object Detection, 23.02
	Surround-View Vision-based 3D Detection for Autonomous Driving: A Survey, 23.02
	Vision-RADAR fusion for Robotics BEV Detections: A Survey, 23.02
6 Volvo, Sverige	F2BEV: Bird's Eye View Generation from Surround-View Fisheye Camera Images for Automated Driving, 23.03
7 華為	Towards Domain Generalization for Multi-view 3D Object Detection in Bird-Eye-View, 23.03, CVPR
8 地平線	MapTR: Structured Modeling and Learning for Online Vectorized HD Map Construction, 22.08, ICLR
	Vision-based Uneven BEV Representation Learning with Polar Rasterization and Surface Estimation, 22.07, CORL
	Multi-Camera Calibration Free BEV Representation for 3D Object Detection, 22.10,
	Sparse4D: Multi-view 3D Object Detection with Sparse Spatial-Temporal Fusion, 22.11
9 蔚來	TiG-BEV: Multi-view BEV 3D Object Detection via Target Inner-Geometry Learning, 22.12
10 大疆	UniFormer: Unified Multi-view Fusion Transformer for Spatial-Temporal Representation in Bird's-Eye-View, 22.07
11 滴滴	FusionMotion: Multi-Sensor Asynchronous Fusion for Continuous Occupancy Prediction via Neural-ODE, 23.02
	Consistency of Implicit and Explicit Features Matters for Monocular 3D Object Detection, 22.07
	Contour Context: Abstract Structural Distribution for 3D LiDAR Loop Detection and Metric Pose Estimation, 23.02

12 毫末智行	BEV-Lanedet: Fast Lane Detection on BEV Ground, 22.10
13 鑒智機器人	BEVDet: High-Performance Multi-Camera 3D Object Detection in Bird-Eye-View, 22.06
	BEVDet4D: Exploit Temporal Cues in Multi-camera 3D Object Detection, 22.06
	BEVerse: Unified Perception and Prediction in Birds-Eye-View for Vision-Centric Autonomous Driving, 22.05
14 Nullmax, USA	BEVSegFormer: Bird's Eye View Semantic Segmentation From Arbitrary Camera Rigs, 22.03, WACV
	FastPillars: A Deployment-friendly Pillar-based 3D Detector, 23.02
15 美團	AeDet: Azimuth-invariant Multi-view 3D Object Detection, 22.11
16 阿里巴巴	BEVFusion: A Simple and Robust LiDAR-Camera Fusion Framework, 22.05, NeurIPS
17 京東	JPerceiver: Joint Perception Network for Depth, Pose and Layout Estimation in Driving Scenes, 22.07, ECCV
	Benchmarking the Robustness of LiDAR-Camera Fusion for 3D Object Detection, 22.05
18 曠視	PETR: Position Embedding Transformation for Multi-View 3D Object Detection, 22.03, ECCV
	PETrv2: A Unified Framework for 3D Perception from Multi-Camera Images, 22.06.
	BEVDepth: Acquisition of Reliable Depth for Multi-view 3D Object Detection, 22.06, AAAI
	BEVStereo: Enhancing Depth Estimation in Multi-view 3D Object Detection with Dynamic Temporal Stereo, 22.09
	MatrixVT: Efficient Multi-Camera to BEV Transformation for 3D Perception, 22.11
19 商湯	DETR4D: Direct Multi-View 3D Object Detection with Sparse Attention, 22.12
	Fast-BEV: Towards Real-time On-vehicle Bird's-Eye View Perception, 23.01, NeurIPS
	Fast-BEV: A Fast and Strong Bird's-Eye View Perception Baseline, 23.01
	BEVDistill: Cross-Model BEV Distillation for Multi-view 3D object Detection, 22.11, ICLR
20 輕舟智行	BEV-Locator: An End-to-end Visual Semantic Localization Network Using Multi-View Images, 22.11

引用申請人《俯視圖感知理解》工作（例如 BEVFormer、PersFormer、OpenLane、LaneSegNet 等）的部分學者與團隊。

姓名	機構	國家/地區	榮譽稱號
Dinesh Manocha	University of Maryland at College Park	美國	AAAS/AAAI/ACM/IEEE/ANAI Fellow
Anima Anandkumar	California Institute of Technology	美國	AAAI/ACM/IEEE Fellow
Kilian Q. Weinberger	Cornell University	美國	AAAI/ACM Fellow
Mani Srivastava	University of California, Los Angeles	美國	ACM/IEEE Fellow
Jensen Huang	NVIDIA	美國	美國工程院院士
Deepak Ganesan	University of Massachusetts Amherst	美國	ACM Fellow
Henrik I. Christensen	University of California San Diego	美國	IEEE Fellow
Jenq-Neng Hwang	University of Washington	美國	IEEE Fellow
Ming C. Wu	University of California, Berkeley	美國	IEEE/OSA Fellow
Fatih Porikli	Qualcomm	美國	IEEE Fellow
Ming-Hsuan Yang	University of California, Merced	美國	IEEE Fellow
Roberto Cipolla	University of Cambridge	英國	英國工程院/科學院院士 /IAPR Fellow
Gerhard Rigoll	Technical University of Munich	德國	IEEE Fellow
Luc Van Gool	ETH Zurich	瑞士	ICCV 马尔奖获得者
Marc Pollefeys	ETH Zurich	瑞士	ACM/IEEE Fellow
Markus Gross	ETH Zurich	瑞士	ACM/EUROGRAPHICS Fellow
Alexander Yarovoy	Delft University of Technology	荷蘭	IEEE Fellow
Max Welling	University of Amsterdam	荷蘭	CIFAR/ELLIS Fellow
Qing-Long Han	Swinburne University of Technology	澳大利亞	IEEE Fellow
Dacheng Tao	Nanyang Technological University	新加坡	澳大利亞科學院院士 /ACM/IEEE Fellow
James Kwok	HKUST	中國香港	IEEE Fellow
Jiaya Jia	HKUST	中國香港	IEEE Fellow
Ya-Qin Zhang	Tsinghua University	中國	中國工程院院士/AAAS/IEEE Fellow
Tieniu Tan	Nanjing University	中國	中國科學院院士/IEEE/IAPR Fellow
Fei-Yue Wang	Chinese Academy of Sciences	中國	AAAS/IEEE/ASME Fellow

Tao Mei	HiDream.ai	中國	IEEE/IAPR/CAAI Fellow
Jun Zhu	Tsinghua University	中國	AAAI/IEEE Fellow
Guo-Jun Qi	Westlake University	中國	IEEE/IAPR Fellow
Yunhong Wang	Beihang University	中國	IEEE/IAPR Fellow
Ce Zhu	UESTC	中國	IEEE/Optica/IET/AAIA Fellow
Lei Zhang	International Digital Economy Academy	中國	IEEE Fellow
Zhisheng Niu	Tsinghua University	中國	IEEE Fellow