

The bird's-eye view (BEV) perception framework tackles the challenge of achieving a unified representation across multi-sensor inputs and complex environments. The table below highlights leading industry players whose research efforts have been inspired by advancements in BEV perception. The data is accurate as of March 2023.

Institution	Related Work
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

Representative scholars and research teams from leading institutions who have cited the applicant's work on Bird's-Eye View Perception.

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