ECCV'20 ONLINE
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DH3D: Deep Hierarchical 3D Descriptors for Robust Large-Scale 6DoF Relocalization



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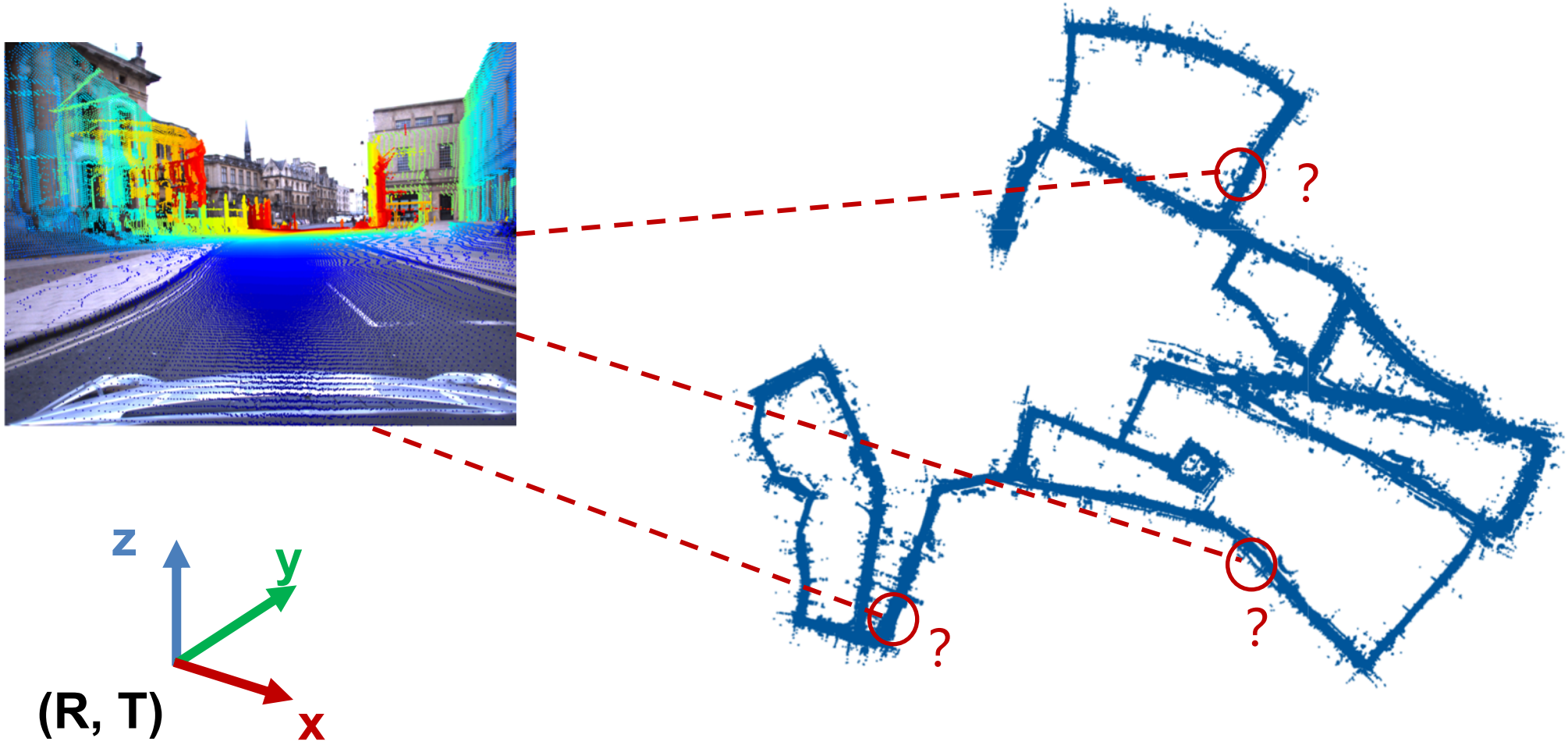
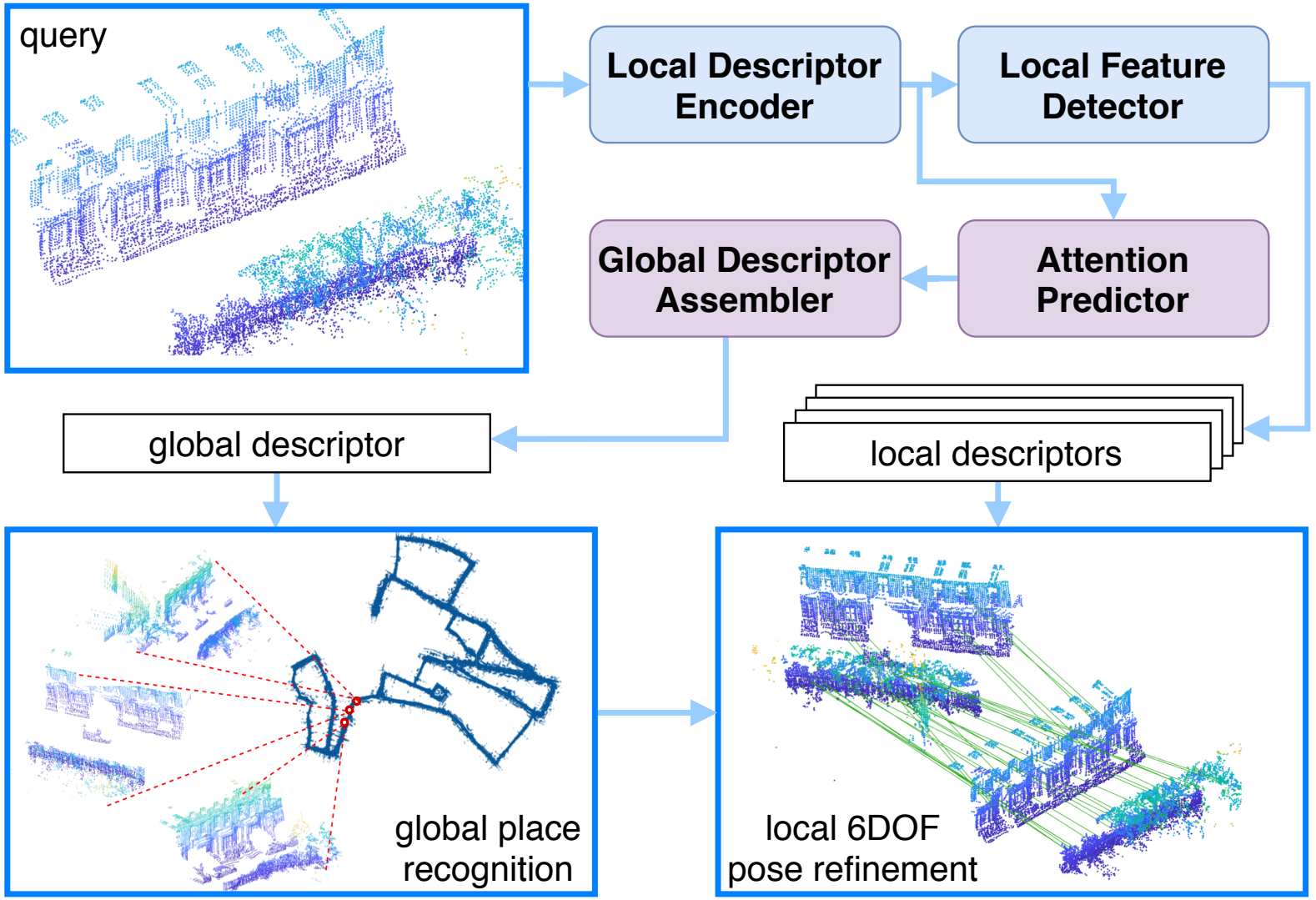
[*] Equal contribution

Target: Point cloud based 6DoF relocalization in a city-scale 3D map



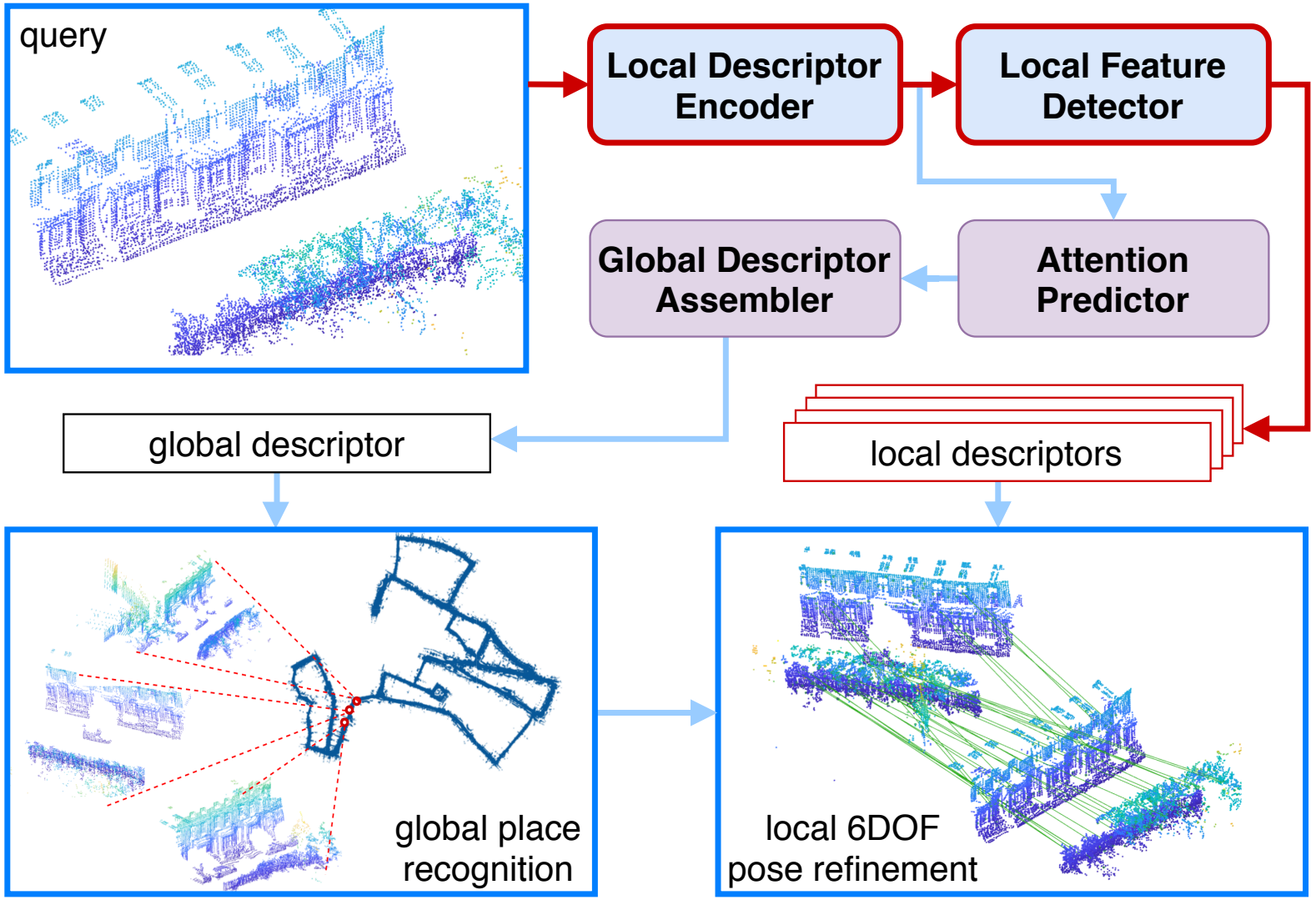
The Oxford RobotCar Dataset

6DoF relocalization based on **Deep Hierarchical 3D Descriptors**



System Overview

6DoF relocalization based on **Deep Hierarchical 3D Descriptors**

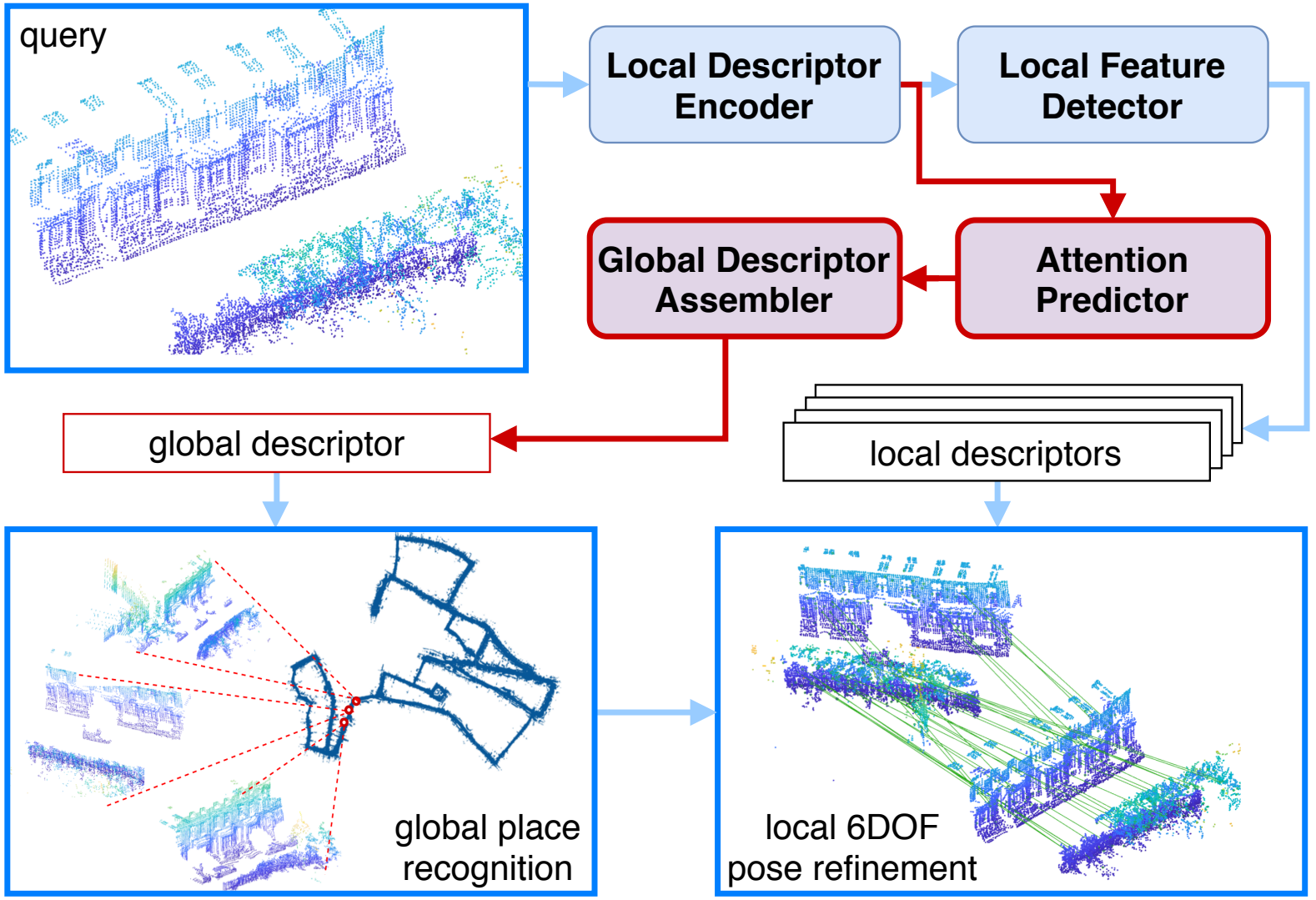


Networks extract

3D keypoints and

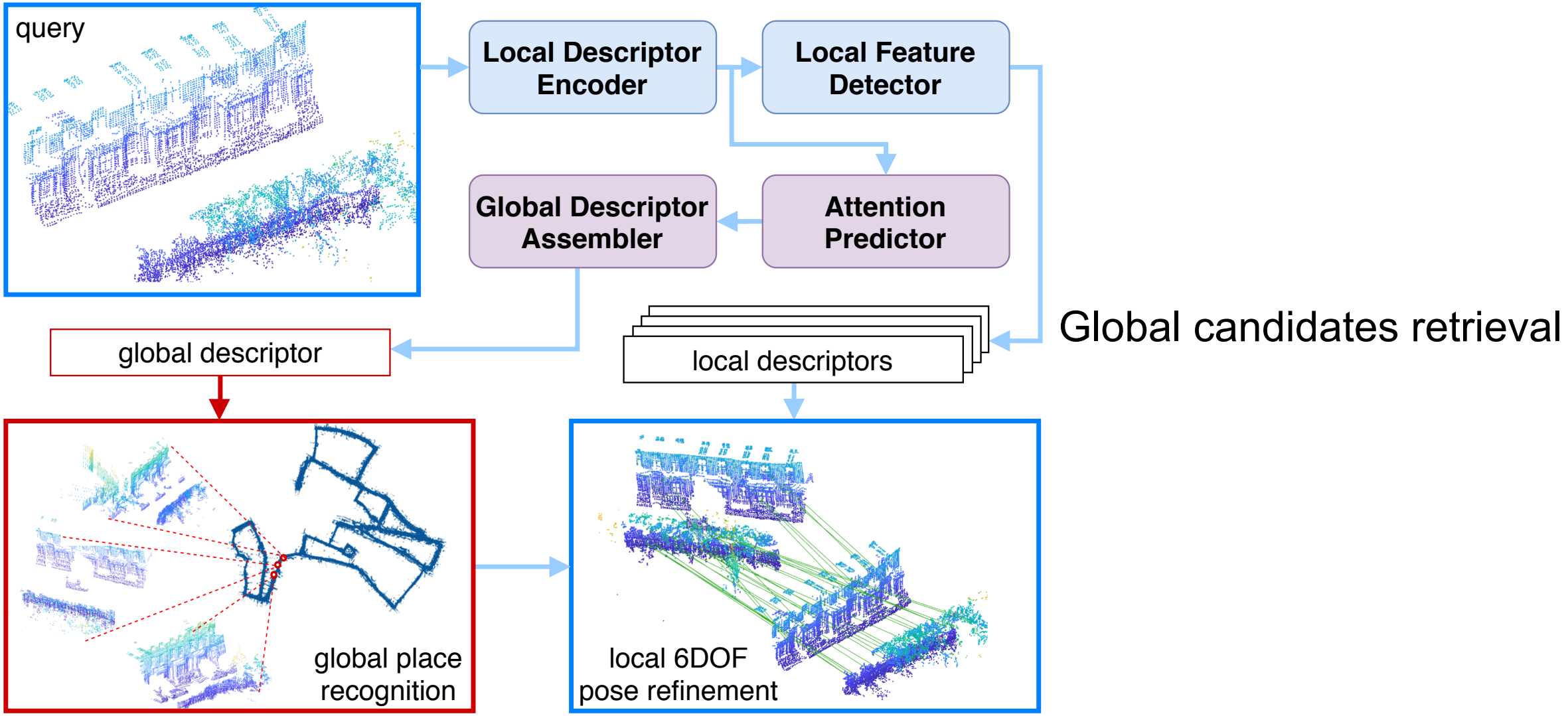
local descriptors

6DoF relocalization based on **Deep Hierarchical 3D Descriptors**

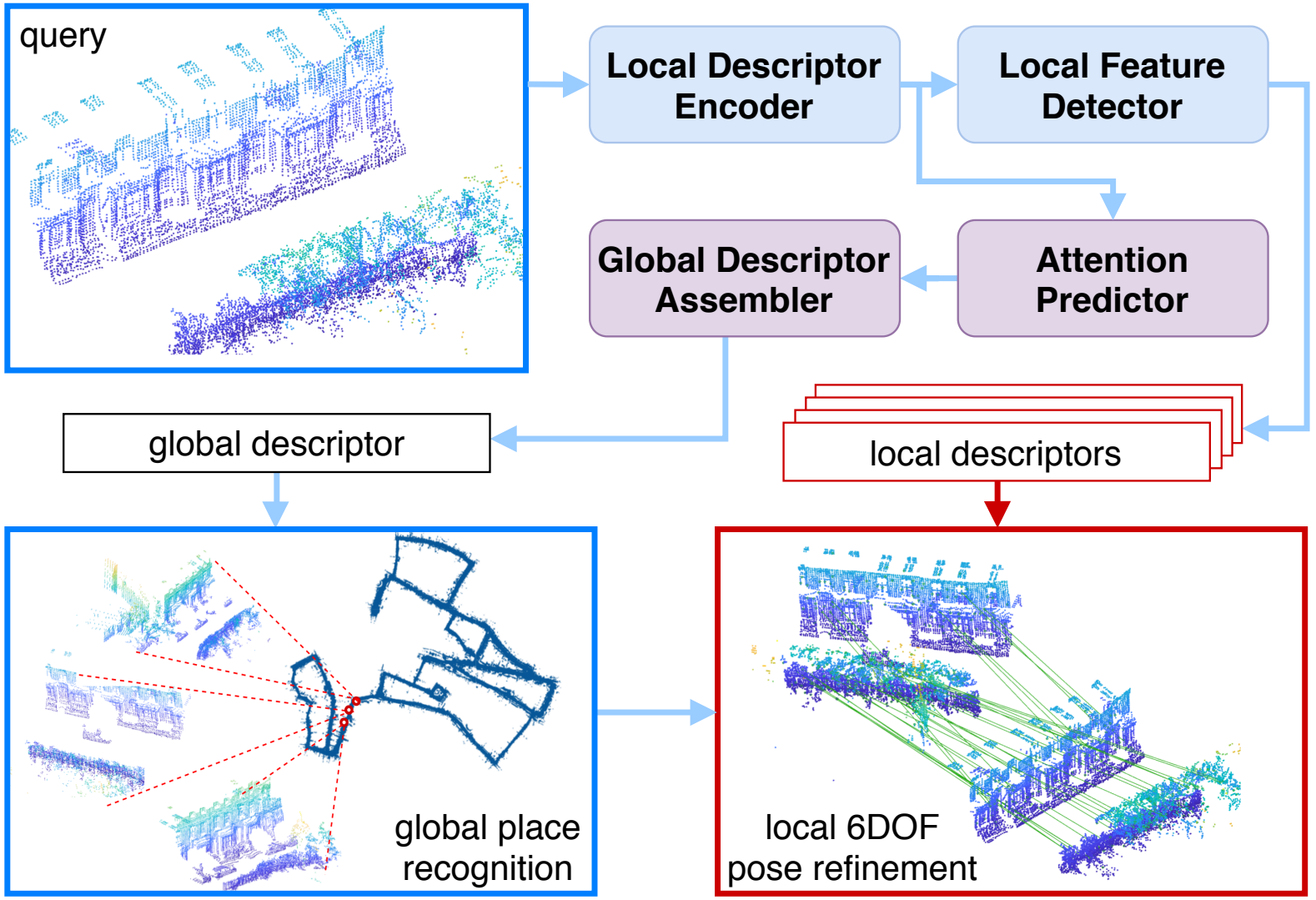


Networks aggregate local descriptors into a **3D global descriptor**

6DoF relocalization based on **Deep Hierarchical 3D Descriptors**



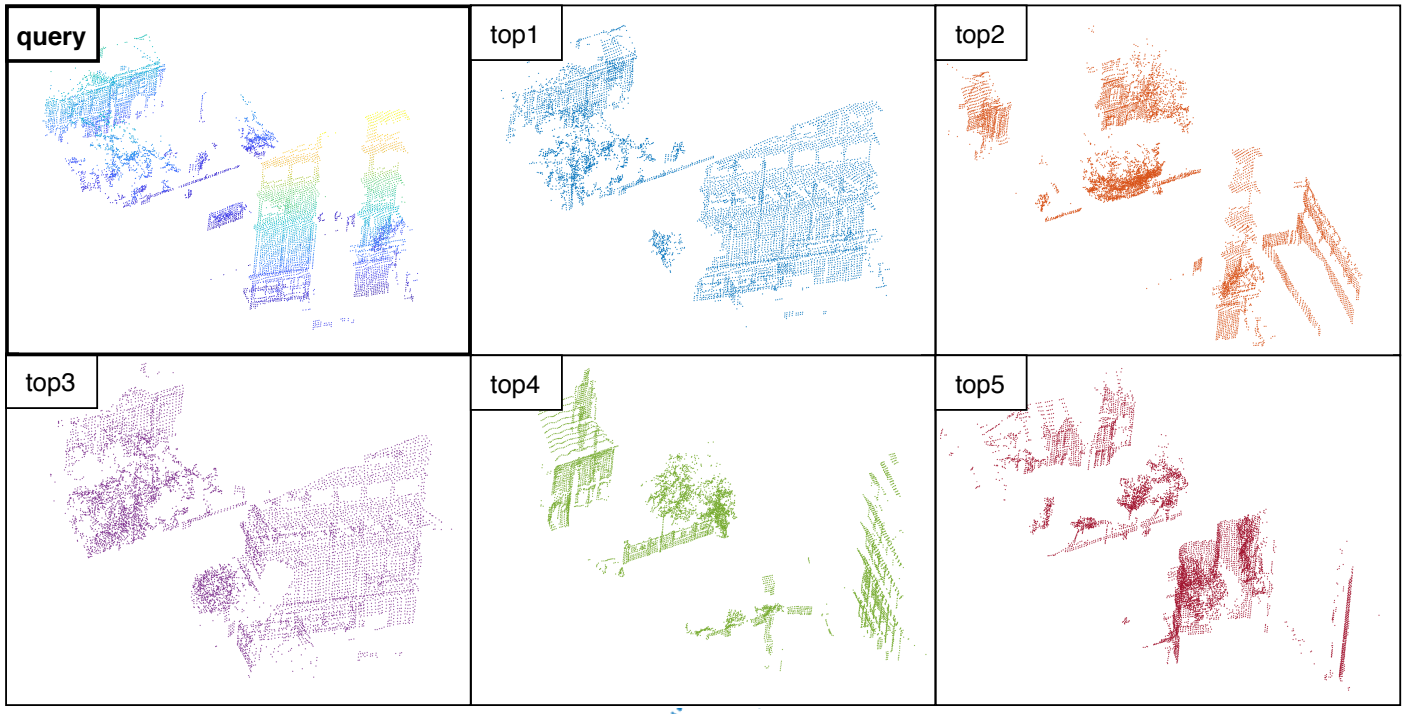
6DoF relocalization based on **Deep Hierarchical 3D Descriptors**

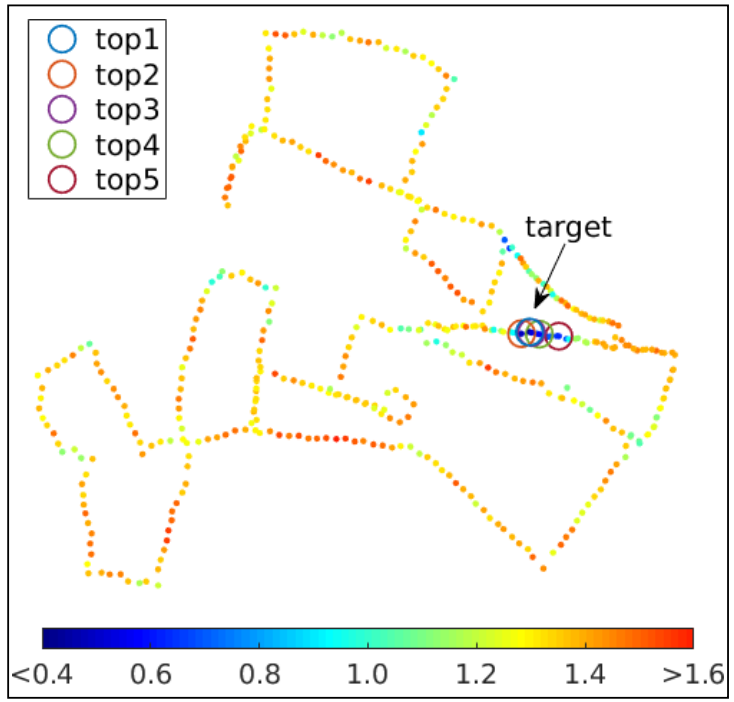


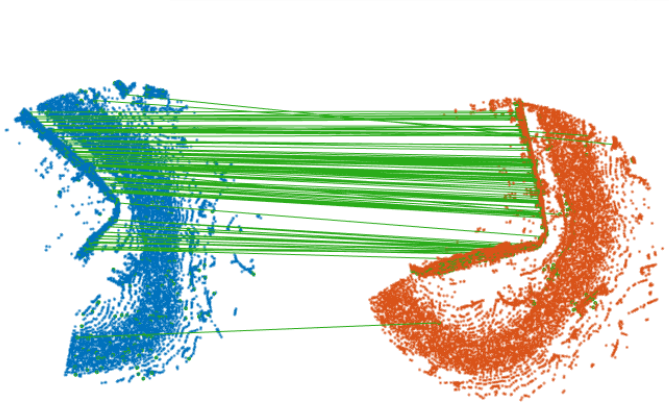
Local 6DoF

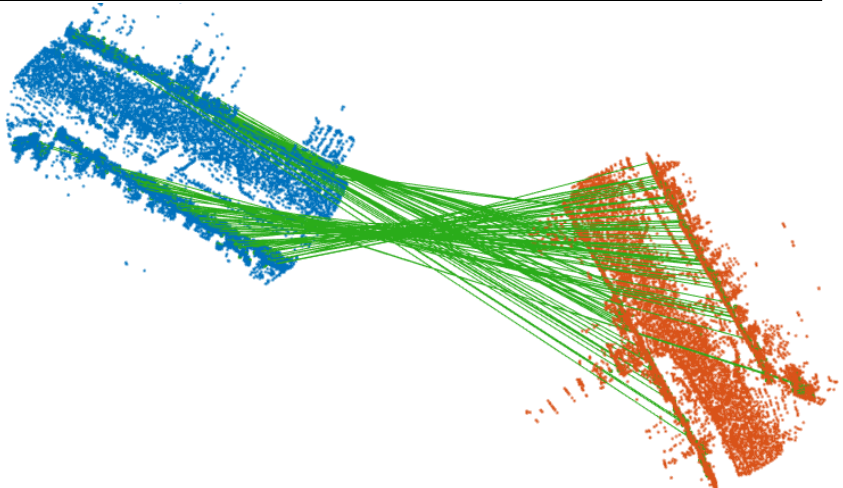
pose refinement

State-of-the-art results for point cloud **retrieval** and **registration**

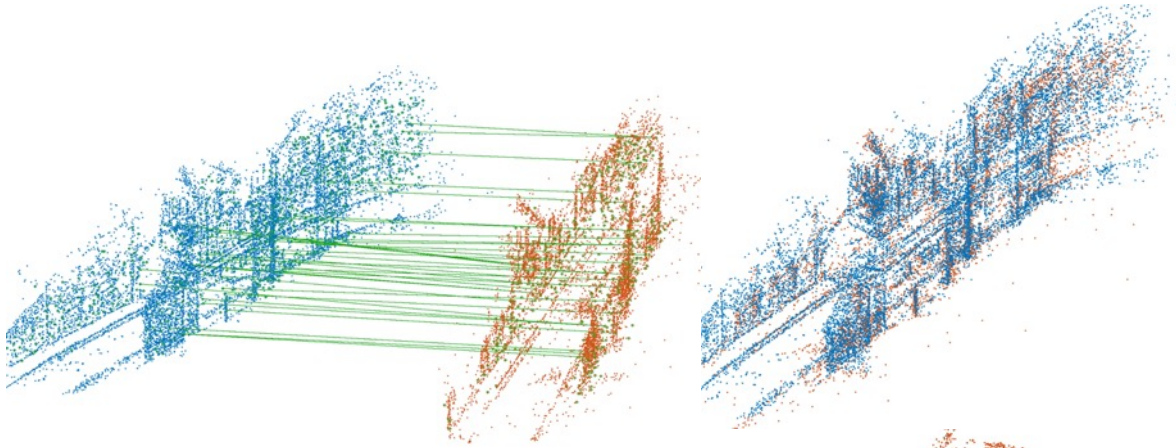


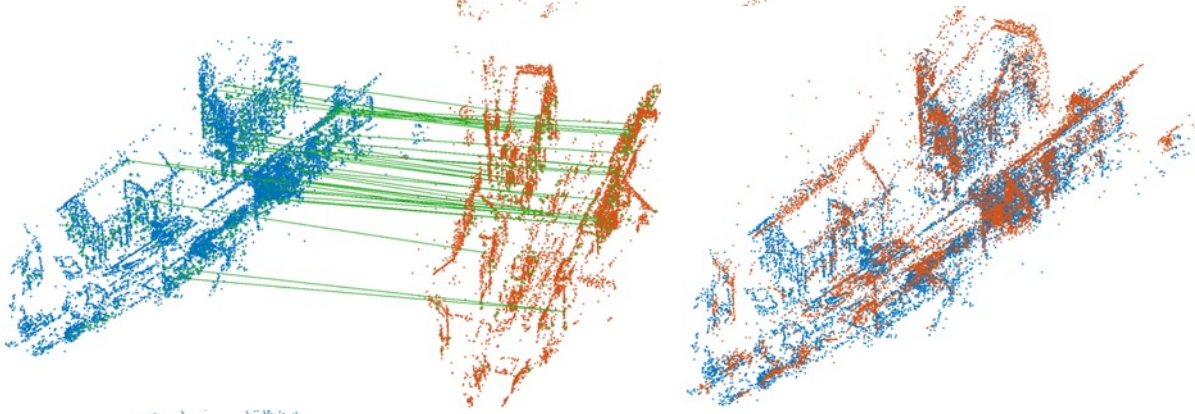


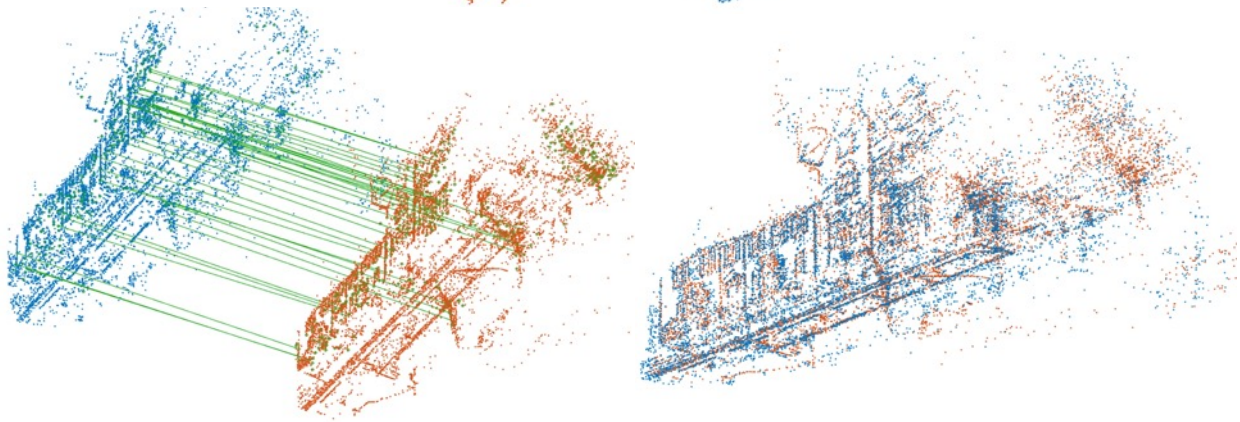




Excellent robustness and generalizability on **vSLAM points**







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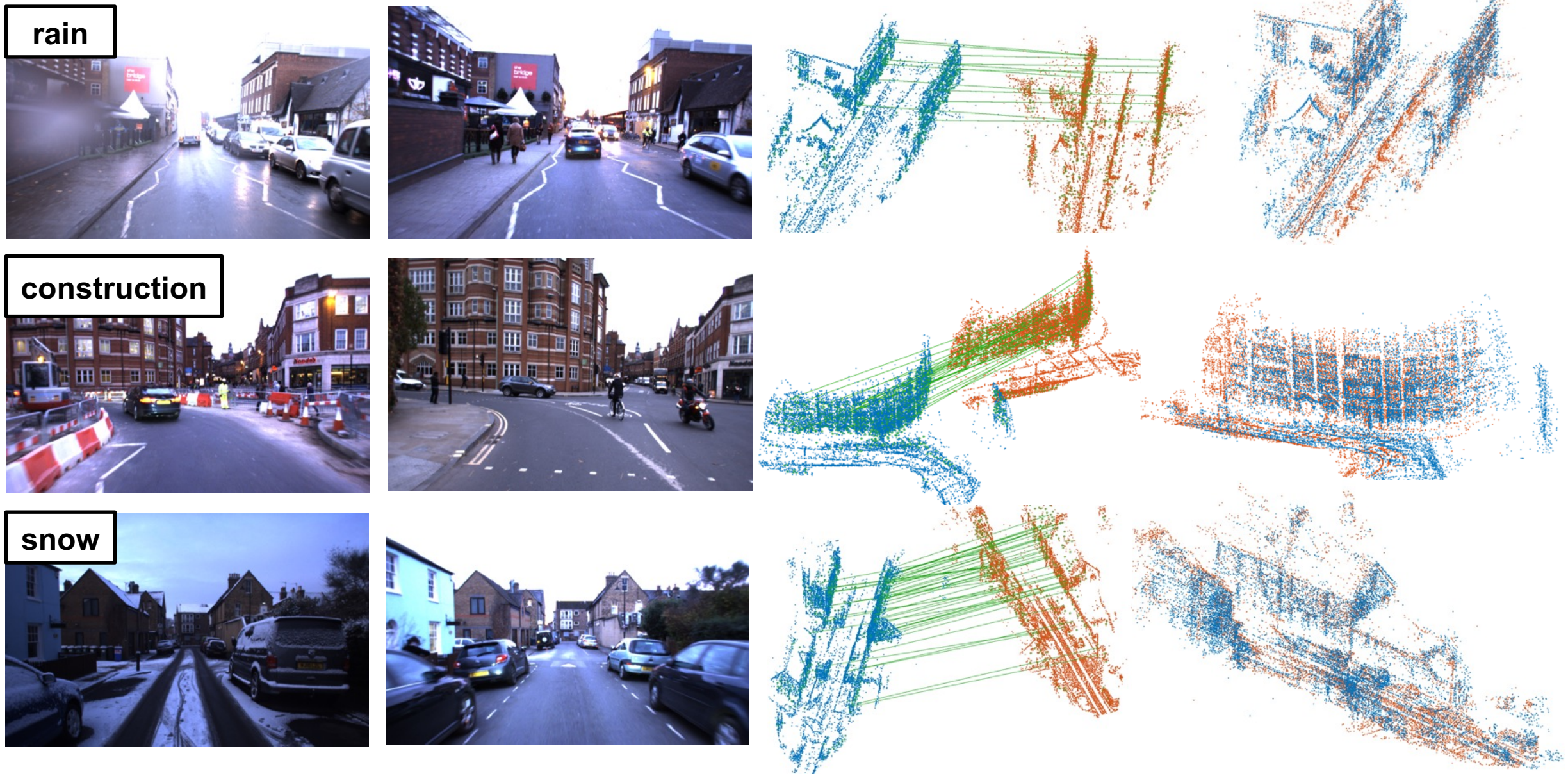

Thank you!

Please join our session for discussion.