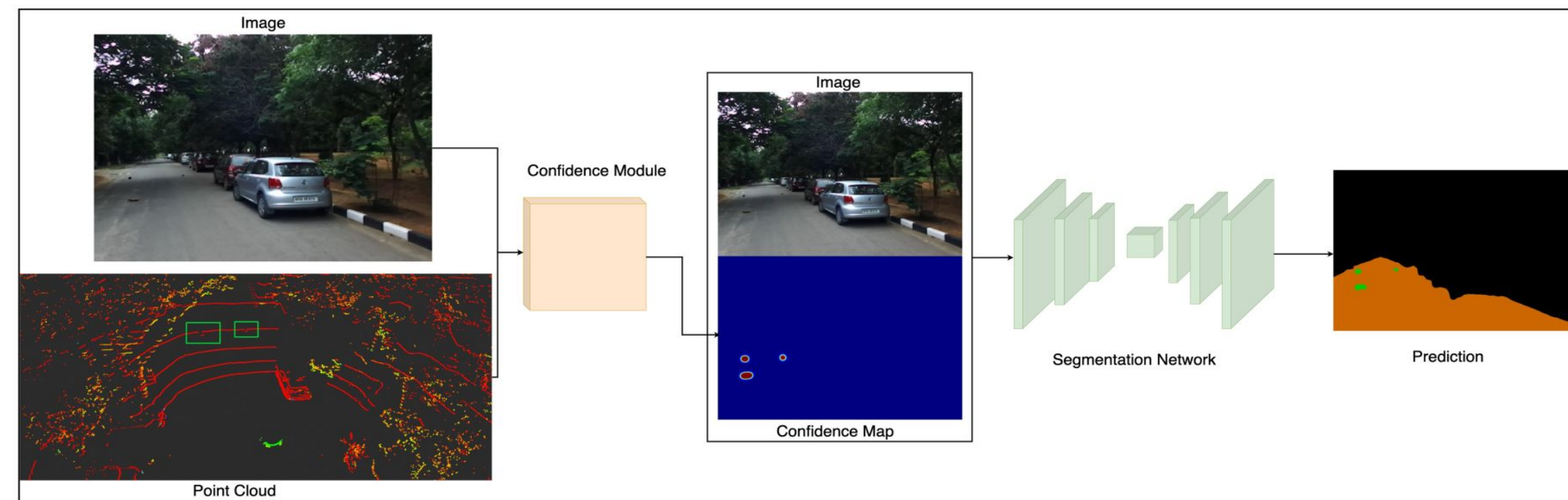


LiDAR guided Small Obstacle Segmentation

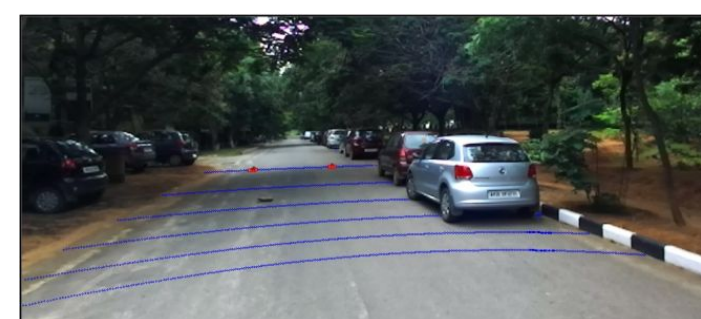
ABSTRACTS

Detecting small obstacles on the road is critical for autonomous driving. We present a method to reliably detect such obstacles through a multi-modal framework of sparse LiDAR(VLP-16) and Monocular vision. LiDAR is employed to provide additional context in the form of confidence maps to monocular segmentation networks. We show significant performance gains when the context is fed as an additional input to monocular semantic segmentation frameworks. We present our results on a custom collected dataset.



Overall Pipeline

METHOD



Break Point Detection



Current Confidence Map



Past Confidence Map



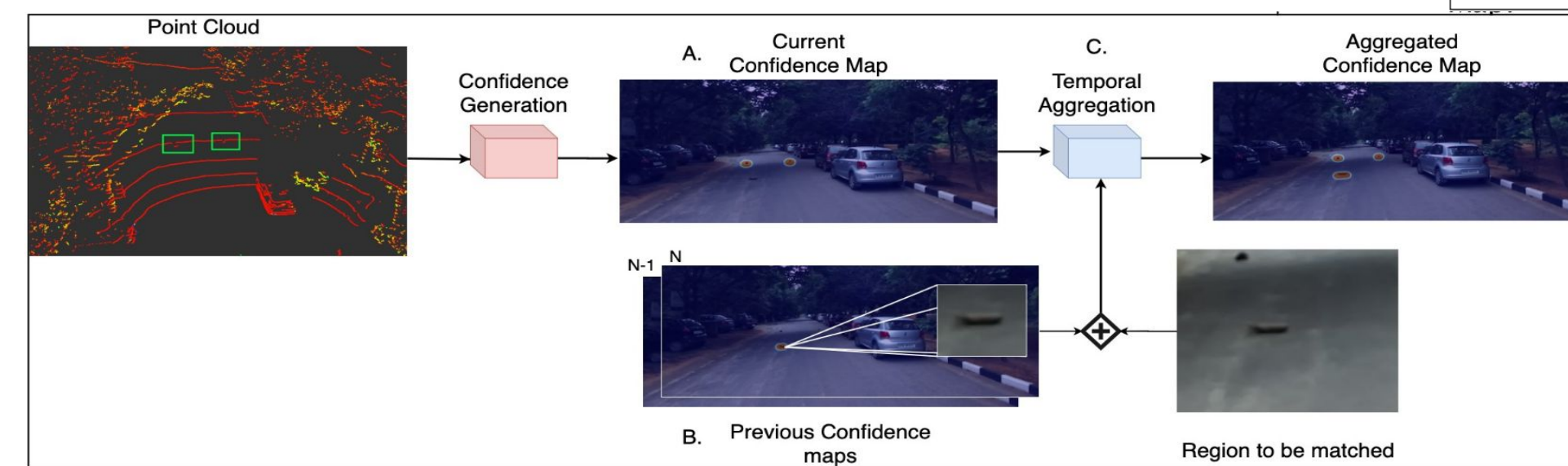
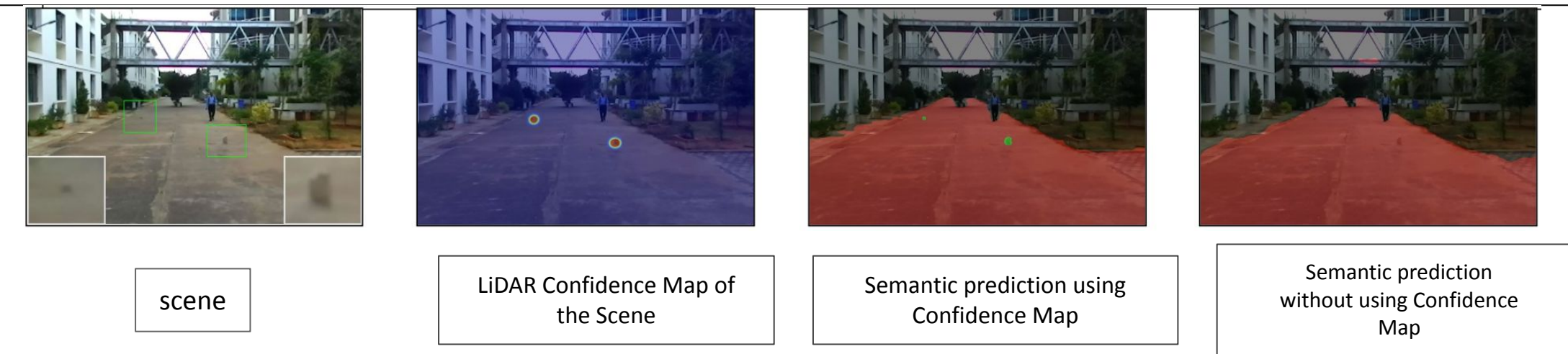
Aggregated Confidence Map



Final Prediction

OBJECTIVE

Small obstacles fall precariously on the border of being classified as drivable space or obstacles. It is prudent for the planning module of an autonomous car to be informed of the small obstacles in its environment.



Confidence Module Pipeline