Adaptive Object Placement for Augmented Reality use in Driver Assistance Systems
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Issue: Augmented Reality (AR) as an interface methodology for driver assistance systems [1] requires intelligent placement of projected AR content within the scene to avoid existing environment objects.


Road Surface Detection
Generalised Vanishing Points (VP) of the road scene are first obtained using a temporal filtered RANSAC approach [2]. A subsequent available road surface area (i.e. free of scene objects) is identified, within this bounded area, using the colour-texture histogram surface tracking technique with additional temporal averaging of the output [1].

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Results
Final AR text and 3D objects are presented within the identified placement region based on a road surface planar homography recovered from earlier VP detection [1, 2].

Conclusions
We present a real-time adaptive placement approach for AR object presentation for interface use in driver assistance systems. Future work will investigate improved road surface detection using feature-based or adaptive machine learning techniques.