

TRACKING VEHICLE IN AERIAL SURVEILLANCE USING DBN

HARSHA. C¹, REKHA B. S² & G. N. SRINIVASAN³

¹M.Tech (IT) Student, Department of ISE, R. V. College of Engineering, Bangalore, Karnataka, India

²Assistant Professor, Department of ISE, R. V. College of Engineering, Bangalore, Karnataka, India

³Professor & Associate Dean, Department of ISE, R. V. College of Engineering, Bangalore, Karnataka, India

ABSTRACT

This Paper represents an automatic vehicle detection system for aerial surveillance. A pixel-wise classification method is designed for vehicle detection. In the proposed system in spite of performing pixel-wise classification, relation among neighboring pixels in a region are preserved in the feature extraction process. The vital part of the paper is feature extraction and vehicle color classification. For vehicle color extraction, a color transform is used to separate vehicle colors and non-vehicle colors effectively. For edge detection, Canny edge detector technique is used. For corner detection, Harris corner detector approach is applied. The method proposed in this paper converts regional local features into quantitative observations that can be referenced when applying pixel-wise classification via Dynamic Bayesian Networks (DBN). The experiment is carried out on a wide variety of videos has ability to work on aerial videos taken at different height and angle. The paper aims at real-time video analysis to detect and track vehicles for target tracing.

KEYWORDS: Aerial Surveillance, Edge and Corner Detector, DBN, Vehicle Detection