

AN EFFICIENT MARINE SURVEILLANCE SYSTEM USING GAUSSIAN MIXTURE MODEL

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Marine surveillance is the effective recognition of all maritime activities that impact the security. About 80% of the world trade is carried by marine transport. The automatic video surveillance of marine environment aims to (i) Detect and identify specific ships, vessels or boats on the sea and their activity. (ii) Extend the capabilities to identify maritime risks such as piracy, trafficking, immigration, etc. However, the development of automatic video surveillance applications for maritime environment is very difficult task, due to the complexity of the scenes such as moving water, waves, etc. The motion of the objects (i.e. ships or boats) can be mixed with the dynamic behaviour of the background. Challenges faced in maritime surveillance system are wide area monitoring, tracking multiple ships with partial and total occlusion, background model creation, night time monitoring, reflections on the water surfaces, weather issues and environmental production issues. In this proposed work, the occlusion problem is mainly focused and obtaining long range surveillance with the use of vision based computing system. Here Gaussian Mixture Model based background subtraction is used to detect the ships.

Keywords—Marine surveillance, Vision based computing system, Ship detection, Background subtraction.