World Academy of Science, Engineering and Technology
International Journal of Computer and Information Engineering
Vol:15, No:11, 2021

Multi-Sensor Target Tracking Using Ensemble Learning

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Abstract : Multiple classifier systems combine several individual classifiers to deliver a final classification decision. However, an increasingly controversial question is whether such systems can outperform the single best classifier, and if so, what form of multiple classifiers system yields the most significant benefit. Also, multi-target tracking detection using multiple sensors is an important research field in mobile techniques and military applications. In this paper, several multiple classifiers systems are evaluated in terms of their ability to predict a system's failure or success for multi-sensor target tracking tasks. The Bristol Eden project dataset is utilised for this task. Experimental and simulation results show that the human activity identification system can fulfill requirements of target tracking due to improved sensors classification performances with multiple classifier systems constructed using boosting achieving higher accuracy rates.

Keywords : single classifier, ensemble learning, multi-target tracking, multiple classifiers
Conference Title : ICMDF 2021 : International Conference on Multisensor Data Fusion
Conference Location : Rome, Italy
Conference Dates : November 11-12, 2021