Project No:

Department of Communication Systems

Project Title: Autonomous Objects Detection and Tracking in Video Streams

Degree Scheme: CCS ☒ ITM ☒ ECS ☒ TCS ☒

Level: BSc/BEng ☒ MSci/MEng ☐

Supervisor: Dr. P Angelov 2nd Supervisor: Dr. P Benachour
Assistant: Mr. P. Sadeghi-Tehran

Project Description:

The aim of this project will be design and development of a real-time system to detect and track objects in video streams used in traffic surveillance, security cameras, etc. This project will give the student an opportunity to further her/his knowledge and skills in an application with high demand in certain industries, security, defence, etc. The software that will be using is Matlab (knowledge and experience in C will be an advantage). The algorithms that will be developed will be upgrade in respect to the existing on-going work in the group and will aim familiarising the student with the techniques, algorithms, and software, experimenting as well as development of more advanced (fast, less computationally involved, and more efficient/precise) methods. This work has a real potential to lead to academic/research publications (subject to good results and performance) which will be an additional boost to the CV of the student.
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Skills required: Programming in Matlab, image and video processing, classification of data.

References:

[1] P. Angelov, P. Sadeghi-Tehran, R. Ramezani, A Real-time Approach to Autonomous Novelty Detection and Object Tracking in Video Streams, *International Journal of Intelligent Systems*, ISSN 0884-8173, 2010, invited paper

[2] P. Angelov, R. Ramezani,X. Zhou, Autonomous Novelty Detection and Object Tracking in Video Streams using Evolving Clustering and Takagi-Sugeno type Neuro-Fuzzy System, 2008 IEEE International Joint Conference on Neural Networks *within the IEEE World Congress on Computational Intelligence*, Hong Kong, June 1-6, 2008, pp.1457-1464, ISBN 978-1-4244-1821-3/08