Intelligent Surveillance Systems

Code EC_____

Introduction, Existing surveillance systems, Background / Fore ground detection, Pattern classification Adaptive background method, overview of Background Update methods, Frame differencing methods, Optical flow methods

Segmentation and tracking, Hybrid tracking Particle filter based tracking method, Local binary pattern based tracking method Behavior analysis of Individuals,

Learning based Behavior analysis, Rule based Behavior analysis, Behavior analysis of Human groups Queuing- Gathering and dispersing Queuing - Gathering and dispersing Application: Household surveillance robot

Facial analysis of Individuals, Supervised PCA for feature generation, ICA based feature extraction, Fusion of SVM classifiers, Behavior analysis, Human groups, Agent tracking and status analysis,

Group analysis, Static analysis of crowds, Human counting and distribution, Blob based human counting and Feature based Human counting, Dynamic analysis of crowd behavior.

References

1. Huihuan Qian, Xinyu Wu and Yangsheng Xu, *Intelligent Surveillance Systems*, Springer 2011.
2. S.G Mallat, A wavelet tour of Signal Processing , Academic press,London, UK, 1998
3. S.Theodoridis and K.Koutroumbas, Pattern Recognition, (Second edition) Elsevier Science, US ,2003.
4. V.Vapnik,"The nature of Statistical Learning Theory", Springer Verlag New York 1995.