Код: 10398

L. Al-Shrouf, M.-S. Saadawia, N. Szczepanski, D. Soeffker

Adaptive Classification Based on Multisensor Decision

Издательство DEStech Publications, Lancaster, 2011 год

This paper investigates the use of multisensor data fusion principle to design an object detection system based on Support Vector Machine (SVM) for monitoring and supervision of complex production processes. The goal is to state the existence of undesired objects in the production process. The monitoring system includes acceleration sensors used as sensor-cluster. A Short Time Fourier Transform (STFT) is used as prefilter in order to extract relevant features of the acceleration signals. The extracted features of the individual sensors undergone multistage filtration process including a preliminary SVM filter, fuzzy filters, a rule-based filter, and double stage local SVM filters. This process aims to avoid misclassification of system states as well as to realize a reliable decision about the presence of undesired objects. The decisions of the individual stages are interpreted and fused in the final decision module which is responsible for the practical realization of the decision whether undesired objects are present.

Ключевые слова:

Содержание.
Adaptive Classification Based on Multisensor Decision