Passenger prediction in metro stations: Analysis of passenger data from security cameras

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Abstract

CCTV camera systems for monitoring and surveillance are widely utilised in enterprises or public systems. It can provide a holistic view on a system and allows security and maintenance personnel to quickly react on changes in the system in an informed manner. However, mostly, the analysis of the data is done manually which is a tedious task and prone to errors or the missing out of information. Automatic analysis of such video-recorded data can help to improve this task in efficiency and accuracy and also enables novel applications build on top of it.

In this paper we present the work done in the SEAM4US consortium that focuses on the automatic analysis of image data captured from CCTV cameras in a Barcelona metro system and to reaction on the extracted stimuli. We present the sensing environment and discuss specifics of the system, introduce the steps for feature extraction from the video data, discuss peculiarities of the recorded data and demonstrate its predictability with an Artificial Neural Fuzzy Inference System (ANFIS).

Author Keywords

subway, passenger density, CCTV cameras, prediction, predictive controlling