

Human Activity Recognition on Edge Computing Devices

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Abstract

Human Activity Recognition (HAR) uses wearable devices integrating inertial and/or physiological sensors to recognize sets of relevant human actions. It is used in several application domains, such as healthcare, sports, industry, and entertainment, both for healthy or correct execution of such activities and also for the recognition of incorrect or imperfect executions, as is the case with learners, in training, or in diagnosis and rehabilitation contexts. This requires precise classification capabilities, mostly based on a variety of models. Executing HAR algorithms is computationally expensive, and often impractical or unfeasible on the remote devices or in the cloud.

We present here an approach for Edge HAR that incorporates AI and ML capabilities, and is amenable to transfer into a Low Code/No Code platform. The aim is to support the standardization of workflows, as well as the ease of reuse for less skilled users, together with an increase in transparency and documentation.

Keywords

Human Activity Recognition, classifiers, edge computing, Low-code development