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Behavioral Anomaly Detection of Older People Living Independently

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Abstract

Older people living independently represent one significant part of the population nowadays. Most of them have family or friends interested in being informed about changes in their routine. Considering these changes signal some physical or mental problem, they can trigger a contact or action from the interested persons to provide support. This paper presents an approach for non-intrusive monitoring of older people to send alerts after detecting anomalous behaviors. An analysis of seven months of data gathered using PIR sensors in a couple's living house has shown regularities in their presence in compartments along the day. We validated the adequacy of an outlier detection algorithm to build a model of the persons' behavior, exhibiting just 3.6% of outliers interpreted as false positives.

Keywords

Autonomous Living Anomaly Detection Behavioral Analysis

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