

Multi resident complex activity recognition in smart home: a literature review

ABSTRACT

This paper presents an overview of state of art of multi resident activity recognition in smart home environment. Generally wearable sensors as well as bespoke sensors are used for tracing the pattern of activity recognition among home dwellers in smart home scenario. Unlike wearable sensor, deployment of bespoke sensors embedded into the environment could be challenging to infer user activities. However, this type of sensors is selected due to human centric concerns, non-obtrusive, inviolate residents' privacy and pervasive concern. Moreover, as human activity is becoming complex when dealing with multi resident, affected that inference activity in smart home scenario are also becoming complicated. Hence, this paper highlight the review of intelligent of smart home including technology sensing involved, previous research on activity recognition area specifically multi resident complex activity recognition in the same environment. We highlighted the multi resident activity recognition including concurrent, interleave and cooperative interaction activity. We present methods behind the main stream of multi resident activity recognition models and algorithms that deploys machine learning as the core subject. Furthermore, this paper also provides potential area for future research.

Keyword: Complex activity recognition; Multi resident; Interleave; Cooperative; Environmental sensor