

# Human Activity Recognition in Smart-Home Environments for Health-Care Applications

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## KEYNOTE ABSTRACT

With a growing population of elderly people, the number of subjects at risk of cognitive disorders is rapidly increasing. Many research groups are studying pervasive solutions to continuously and unobtrusively monitor fragile subjects in their homes. Clinicians are interested in monitoring several behavioral aspects for a wide variety of applications: early diagnosis, emergency monitoring, assessment of cognitive disorders, etcetera. Among the several behavioral aspects of interest, anomalous behaviors while performing activities of daily living (ADLs) are of great importance. Indeed, these anomalies can be indicators of cognitive decline. The recognition of such abnormal behaviors relies on robust and accurate ADLs recognition systems. Moreover, in order to enable unobtrusive and privacy-aware monitoring, environmental sensors in charge of unobtrusively capturing the interaction of the subject with the home infrastructure should be preferred.

This talk presents our latest research efforts on these topics. In particular, the talk will cover: a) novel unobtrusive sensing solutions, b) hybrid ADLs recognition methods and c) techniques to detect abnormal behaviors at a fine granularity. We will discuss those challenges reporting our experience and identifying critical aspects which still need to be investigated.

## KEYNOTE SPEAKER BIOSKETCH



Gabriele Civitarese is a postdoctoral researcher at the Computer Science department of the University of Milan, Italy. He received his Ph.D. in Computer Science from the same university in 2018. He is a member of the EveryWare laboratory since 2014. His research interests cover context-awareness, human activity recognition and behavioral monitoring in smart-homes. He published his results at major international conferences and journals. He also served as TPC member for major events in pervasive computing.