

Graduate School of Science and Technology Master's Thesis Abstract

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Thesis title	Complicated Human Activity Recognition Based on Wearable Sensors Scenario		
Abstract			
<p>Human activity recognition (HAR) has become significant in researches and industries fields, like healthcare and elderly live supporting, especially in context of the COVID-19 global epidemic.</p> <p>The increasing number of people working from home, leads the health risk from the lack of physical activity, and prolonged sedentary, the importance of HAR research getting prominent in this condition. However, most of existing studies were focused on the recognition of simple human activities, which are acted high repetitiously in short period such as sitting and standing. In this thesis, human behaviors were subdivided into complicated actions and activities, the actions were considered as the components of activities, for instance, office working activity consider as the combination of writing, reading books, and using computer.</p> <p>On the basis of accurate identification of complex movements, with considering the different complicated activities' duration and its components in real life, the Temporal-Spatial Graph Neural Network was proposed to recognize these complicated human activities. It is a data-driven framework that can retain effective information for representing and recognizing complicated activities. The results of our experiments data show that this method has ability to represent and recognize complicated activities effectively.</p>			