

IoT- & Video-based Human Activity Analysis for Healthcare & Other Applications

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Human activity Recognition (HAR) are explored in video-based computer vision domain and sensor-based ubiquitous research areas. Vision-based human action or activity recognition approaches are based on RGB video sequences, or depth maps, or from skeleton data – taken from normal video cameras or depth cameras. On the other hand, sensor-based activity recognition methods are basically based on the data collected from wearable sensors having accelerometer, gyroscope, or so on. There are numerous applications on HAR, however, the healthcare, elderly support, and related applications become very important arenas with huge social and financial impact. Due to the advent of various IoT sensors, it becomes more competitive as well as easier to explore different applications.

The keynote will cover HAR approaches in both video-based and sensor-based domains, highlight healthcare perspectives and methods. The presentation will be based on the books as follows:

1. Md Atiqur Rahman Ahad, Anindya Das Antar, and Masud Ahmed, *"IoT Sensor-Based Activity Recognition - Human Activity Recognition"*, Springer Nature Switzerland AG, 2020.
2. Md Atiqur Rahman Ahad, *"Motion History Images for Action Recognition and Understanding"*, Springer, 2013.
3. Md Atiqur Rahman Ahad, *"Computer Vision and Action Recognition: A Guide for Image Processing and Computer Vision Community for Action Understanding"*, Springer, 2011.
4. Md Atiqur Rahman Ahad and Mosabber Uddin Ahmed, *"Signal Processing Techniques for Computational Health Informatics"*, (edited), Springer Nature Switzerland AG, 2020.
5. Md Atiqur Rahman Ahad, Paula Lago, and Sozo Inoue, *"Human Activity Recognition Challenge"*, (edited), Springer Nature Switzerland AG, 2020.
6. Md Atiqur Rahman Ahad, Sozo Inoue, Daniel Roggen, and Kaori Fujinami, *"Activity and Behavior Computing"*, (edited), Springer Nature Switzerland AG, 2020.
7. Md Atiqur Rahman Ahad, Upal Mahbub, and Tauhidur Rahman, *"Contactless Human Activity Analysis"*, (edited), Springer Nature Switzerland AG, in press, 2020.
8. Md Atiqur Rahman Ahad and Upal Mahbub, *"Action and Activity Recognition: Datasets and Challenges"*, Springer Nature Switzerland AC, to appear in 2021.

Short Biography:

Md Atiqur Rahman Ahad, SMIEEE; Professor, University of Dhaka (DU); Specially Appointed Associate Professor, Osaka University. He studied at the University of Dhaka, University of New South Wales, and Kyushu Institute of Technology. He authored several books, e.g., *"IoT-sensor based Activity Recognition"*; *"Motion History Images for Action Recognition and Understanding"*; *"Computer Vision and Action Recognition"*, and few edited books at Springer. He published 160+ peer-reviewed papers, ~100 keynote/invited talks, ~30 Awards/Recognitions. He is an Editorial Board Member of Scientific Reports, Nature; Assoc. Editor of Frontiers in Computer Science; Editor of Int. Journal of Affective Engineering; Editor-in-Chief: Int. Journal of Computer Vision & Signal Processing <http://cennser.org/IJCVSP>; General Chair: 10th ICIEV <http://cennser.org/ICIEV>; 5th IVPR <http://cennser.org/IVPR>; 3rd ABC <https://abc-research.github.io>, Guest-Editor: Pattern Recognition Letters, Elsevier; JMUI, Springer; JHE, Hindawi; IJICIC; Member: OSA, ACM, IAPR. More: <http://AhadVisionLab.com>