The task of human activity recognition using smartphone's built-in accelerometer has been well addressed in literature. In partic-ular, the existing works considered time segments of size 128 [7], 200 [2], 250 [8], 300 [9] and 512 [10], which corresponds to interval duration of 2.56-10 s. Smaller time intervals were used in [11], and while this work shows quite good performance, a very small private dataset obtained from 4 users and a limited range of activities makes its results incomparable to any existing solution. A different approach to feature extraction task is based on deep learning/CNNs, and several works have been conducted to adapt it to HAR problem. Though a number of papers proposed online HAR systems, they used recognition intervals that are generally quite long for online classification. When it comes to practical applications, one challenge that arises here is real-time classification of user activity. The first difference between the proposed solu-tions is how the input signals are treated. Furthermore, all mentioned systems were based on hand-designed features.