Exploring significant motion sensor for energy-efficient continuous motion and location sampling in mobile sensing application

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The significant motion sensor is a new sensor that promises motion detection at low power consumption. Despite that promise, no known research has explored the usage of this sensor, especially in mobile sensing research. In this study, we explore the utilization of this significant motion sensor for continuous motion and location sampling in a mobile sensing application. A location sensor is known for its expensive power consumption in retrieving the location data, and continuously sampling from it will quickly deplete a smartphone battery. We experiment with two sampling strategies that utilize this significant motion sensor to achieve low power consumption during continuous sampling. One strategy involves utilizing the sensor naively, while the other involves combining with the duty cycle. Both strategies achieve low energy consumption, but the one that combines with the duty cycle achieves lower energy consumption. By utilizing this sensor, mobile sensing research especially that samples data from location or motion sensors, will be able to achieve lower energy consumption.