

MEETING ABSTRACT

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Porcupines: fine grained activity monitoring in psychiatry using accelerometer sensors

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With activity sensors becoming smaller and more power efficient by the day, wearable activity sensors that anyone could wear just as easily as a wristwatch have become a feasible concept. We present a small light-weight module, called Porcupine, which aims explicitly at continuously monitoring human activities as long as possible, and as fine-grained as possible. The main focus in this work is not so much the hardware, which uses omni-present and relatively cheap accelerometer technology, but the algorithms that analyze the sensor data and predict what physical activity the wearer is performing. We present results from the latest experiments with our prototypes, and show some scenarios in which such a fine-grained actigraph can be put to use. We also discuss the important application of the porcupine technology in the clinical monitoring of patients with Bipolar disorder and other psychiatric disorders where activity monitoring is clinically important.

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