Activity Recognition with mobile devices

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***Abstract*—This document is a model and instructions for LaTeX. This and the IEEEtran.cls file define the components of your paper [title, text, heads, etc.]. *CRITICAL: Do Not Use Symbols, Special Characters, Footnotes, or Math in Paper Title or Abstract.**

TODO

***Index Terms*—Human Activity Recognition, accelerometer, movement pattern detection**

I. Introduction – Simon

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intro

II. Related Work – Paul

blbla Refer to articles, how they collected data did they use mobile phones or separate acceleration sensor devices body placement of the sensor significant difference of the results with varying orientation of the phone/sensor. As the performance of algorithms and devices have increased, these problems can be dealt with by now. Also wearing the sensor at different body parts is worsening the situation. Therefore a training phase combined with an AI learning algorithm can help to improve detection results. Kwapisz2011 [1] however is using orientation of the 3 tri-axial sensor to distinguish between standing and sitting, which is not a real-world scenario for everybody as every individual user might carry the phone in a different way. results are more precise with multiple sensors, but cell phones are the easiest solution to spread the capability of measuring and classifying movement patterns real-time processing at low cost [2] The experimental results show that when the sensor is placed on different rigid body, different models are required for certain activities [3]. bla

A. *Subsection blabla*

subsection

III. Evaluation – Simon

A. *Results*

TODO add image

TODO Charts oder shit

B. Analysis

TODO some analysis shit

IV. Conclusion – Paul

TODO Conclude or smth

List of Abbreviations

ias

TODO Abbreviations

References

[1] Jennifer R Kwapisz, Gary M Weiss, and Samuel A Moore. Activity recognition using cell phone accelerometers. *ACM SigKDD Explorations Newsletter*, 12(2):74–82, 2011.

[2] Tomas Brezmes, Juan-Luis Gorricho, and Josep Cotrina. Activity recognition from accelerometer data on a mobile phone. In *International Work-Conference on Artificial Neural Networks*, pages 796–799. Springer, 2009.

[3] Apiwat Henpraserttae, Surapa Thiemjarus, and Sanparith Marukatat. Accurate activity recognition using a mobile phone regardless of device orientation and location. In *Body Sensor Networks (BSN), 2011 International Conference on*, pages 41–46. IEEE, 2011.

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