

Machine Learning-based Quantification of Personal Fitness

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Introduction

Over the last few years, monitoring technology have taken a leap and helped free the many physical constraints carry-on sensors like GPS-trackers, accelerometers, and gyroscope posed. This has paved way for academic research in the field of tracking and classifying data collected from numerous human activities through means of wearable smartwatches. The aim of this research project is to deeply explore the various possibilities of context aware application in the field of strength training. The objective is achieved through means of collecting, preprocessing, and analyzing raw data collected from wristband gyroscope and accelerometer obtained during workout sessions. Moreover, monitoring activities aids in tackling health related issues, especially in regards to elderly.

Numerous works from past have been focused on tracking movements and analyzing user feedback through means of exercises. However, these systems do not entirely replace the tasks fulfilled by personal trainers. Weight training, similar to cardiovascular aerobic exercises is an essential aspect to health and fitness (Mark Hoogendoorn n.d.). However, there are yet to be many wearable devices that track the strength training exercises. At the moment there is only one wearable device that identifies exercise and tracks the repetitions in a set. ("Atlast Wristband," n.d.)

Citations

- "Atlast Wristband." n.d. <https://atlaswearables.com>.
Mark Hoogendoorn, Burkhardt Funk. n.d. "Machine Learning for the Quantified Self." *Springer*. Accessed 2018. <https://link.springer.com/book/10.1007/978-3-319-66308-1>.