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Title :

Development of indoor tracking system at universities

Keyword :

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Abstract :

Purpose

The purpose of this study is to provide a solution for examining and tracking health status of university students, focusing especially on tests done indoors. This complex solution could measure the input health level of the students and track the changes during the years spent in the higher education. The main problem at many universities is, that weather conditions are often not suitable for tests performed outdoors (e.g. Cooper fitness test). There are comparable exercises, which can be done indoors (e.g. 20 meter shuttle run test). Yet there is no widespread technical solution to track and measure these activities inside buildings and the physical parameters affected by them.

Method

Through literature research I established the fact, that there are many available solutions for outdoor activity tracking based on GPS-technology, but there is no comparable solution for indoor sports. After choosing an appropriate technical standard for indoor positioning, I used an accessible hardware solution for testing. I investigated and proved the capability of the technology for fast movement tracking. After that I researched the available solutions of health diagnostic sensors (pulse, body temperature, skin resistance, etc.), which could be applicable for fitness analysis.

Result

Measuring the current performance of the cardiovascular system is a good indicator of the general body health condition. The imagined concept of the examining solution is capable of performing diagnostic measurements and tracking mid- and long-term changes of health condition. The main result is a hardware product, which can record students' sport activity inside buildings. As the concept, the improved system can save the corresponding medical data also.

Conclusion

A solution with the described capabilities can be precisely developed and produced easily within the framework of the technical facilities at any technical university. A well-designed database would be able to keep the records of these activities, and generate statistics for a wider overview used by physical educators. A prediction scheme can help young people to stay physically fit despite of challenges facing in the educational area without any need of interventions by educators and/or medical staff. In case of having access to a large amount of data, detailed and personalized programs can be developed for keeping students fit and healthy.

Young Researcher Presentations :

Yes

Contribution :

The paper has not been contributed to any other conference.

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