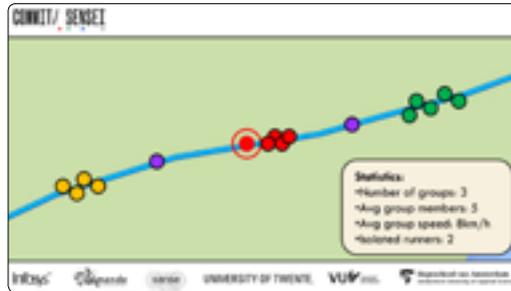


40. Intelligently grouping amateur runners

Currently, most amateur runners train alone, which may lead to decreased motivation over time. We have developed an app that intelligently groups runners with similar physical parameters in order to make the training more efficient and more fun. In our demo, we display interactively on a screen how a person running on a treadmill follows a track with other runners in a virtual environment. During the run, the app tries to match her with other groups of virtual runners that she passes by, based on the speed and fitness of the person. When a good group is found, the runners in the group are coloured in a certain way, to indicate our runner that she should train together with them.



ICT science question

Can we make an app that clusters signals in groups that are similar? Can we develop a clustering algorithm that is fast, fault-tolerant and has low battery usage?

As a solution, we propose a novel peer-to-peer clustering algorithm. To our knowledge, this algorithm is the fastest of its kind and the attempt to cluster runners in real-time has never been made.

Application

The context is to monitor runners in real-time based on their physical condition and social interests. Our clustering algorithm can use different types of criteria for matching, like physical parameters, interests, age etc. Depending on the chosen criteria, the app can be used to stimulate people to keep up with the others, thus improving performance or to encourage people to socialize. There are already other apps on the market that challenge people to run together (e.g. Endomondo), but ours is the first one that does this in real-time.



Nicolae Vladimir Bozdog
n.v.bozdog@student.vu.nl
www.linkedin.com/pub/vladimir-bozdog/5b/217/b88

COMMIT/ project
SENSEI Sensor based Engagement for Improved Health

Alternative Application

The algorithm we propose can be applied to other domains as well. For example, it can be used to help companies around the world to find potential business partners. If each company would expose its services in a standardized way, our system would be able to search among hundreds of thousands of companies in order to find meaningful partnerships (e.g. Apple with Nike). It could also be used to sell bundles of products that are related or to match people in social networks.

Nice to know

The National Public Health Institute (RIVM) estimated that, in the Netherlands, 1,4 percent of expenditure on health is a consequence of too little exercise.

It has been estimated that in a big city like Rotterdam, sport benefits for nearly half a billion euro per year. Slightly more than half is the result of a healthier population, almost a quarter is due to less absenteeism at work, twelve percent to a greater quality of life and three percent to less school absenteeism.



Our app helps runners find people to run with that have the same interests and fitness, thus making running more fun and social.



We take an innovative approach to make running more social, by combining the latest mobile technologies in an app that helps runners make new friends while they run.



Bored of running alone? Our app helps you make new friends that are just as good runners as you, so you'll never have to run alone again.



We use a distributed clustering algorithm to group runners in real-time based on their physical parameters and social interests.



UNIVERSITY OF TWENTE.

