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Everywhere Run: a virtual personal trainer for supporting people in their running activity

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ABSTRACT

In the last years many medical researches have reported an increase of health problems in developed countries, mostly related to a sedentary lifestyle (as obesity and linked pathologies like diabetes and cardiovascular diseases). As a consequence, many research efforts have been carried out for finding strategies for motivating people to exercise regularly.

In this paper we present an Android-based mobile application, called *Everywhere Run* [1], that aims at motivating and supporting people during their running activities, behaving as a virtual personal trainer. *Everywhere Run* fosters the interaction between users and real personal trainers, in order to make it easy to non expert people to start working out in a healthy and safe way.

General Terms

Sport, Motivation, Healthy Lifestyle, HCI

Keywords

Running, Android, Training, Sport, Personal Trainer

1. INTRODUCTION

In the last years sedentary lifestyle has become an increasing problem for people's health. Indeed it is reported to be the cause of several serious illnesses like obesity, diabetes, hypertension and so on. There are many reasons why people do not perform any physical activity, among them: motivational lack, time constraints, difficulties to start, gym membership fees, equipment costs, etc.

Running can perhaps in part address some of the above obstacles. Indeed, it does not require special equipment, there are not any fees to pay and it can be done anytime, anywhere. One of the biggest barriers beginners face is about the way they should work out. Often people do end

up designing their workouts on their own, perhaps causing even serious consequences (and they stop exercising).

Everywhere Run addresses this scenario fostering a social interaction between runners and real personal trainers, so that the former can get a workout plan specifically tailored for their needs. Thus it makes it easy to start running and avoiding common errors. The application allows a personal trainer to build a detailed running regime and send it to a user by e-mail. The latter will receive its running regime inside *Everywhere Run*, seamlessly. Then the application will assist the user as if a real personal trainer were there with him, assuring he will run the correct distance at the right pace. Hence a beginner does not have to worry about anything else but just run.

Indeed several researches demonstrate ([4][8][3][5]) that social interactions motivate people to exercise. Running under the constant support of a qualified personal trainer is much more motivating and safe too. Nevertheless many people avoid this possibility for economic reasons or just because they do not want time constraints (users must meet the personal trainers). *Everywhere Run* addresses this situation: it allows users to get in touch with a real trainer and obtain a customized workout regime, then it behaves as a virtual personal trainer, available anytime, anywhere (i.e., no time constraints). The real personal trainer still needs to be paid, but given that it is not (strictly) necessary to meet with him, some of the costs are cut down and it should lead to cheaper fees.

With respect to the state-of-the-art proposals, our approach promotes interactions between users and real coaches through a community of runners. At the end of their workouts users can easily share their results with the community. Other existing solutions only focus on the interaction between the user and the application, thus just relying on "artificial intelligences". They can be engaging, but can not provide the same level of support that a qualified "human" trainer can offer.

2. RELATED WORK

Many studies have been conducted about increasing physical activity motivation by means of mobile technologies. In [8] it is showed that social factors like sharing results and friendly competition can motivate people to further exercise. In [4] authors have derived some interesting key design requirements for this class of applications. MOPET [3] exploits a virtual trainer that shows users how to correctly

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perform exercises. TripleBeat [5] assists runners to attain their goals in terms of a certain heart rate. Finally, there are a number of softwares that foster physical activity through gaming, as [6] and [2].

3. EVERYWHERE RUN

Everywhere Run [1] is a software designed for the Android OS which supports runners during their activity. It allows users to fully design their own regimes or to get them from a qualified personal trainer. Figure 1a shows the workout creation screen where a complex regime has been created. It is composed of several “sessions”, called “traits”: for each of them, it is possible to define the distance and pace to keep. Hence *Everywhere Run* permits to define quite complex regimes in order to satisfy the needs of even the most demanding runners.

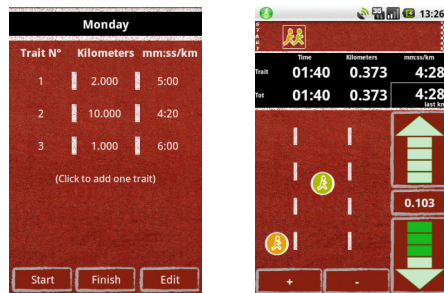


Figure 1: a) Workout creation b) Ongoing workout

3.1 Virtual Personal Trainer

One of the most important features of *Everywhere Run* is its ability to act as a virtual personal trainer. Indeed it guides the runner through the whole workout in such a manner for him to meet its predefined goals. This is achieved using an intuitive interface where the user can get at a glance all needed data while running. Figures 1b shows the ongoing workout screen and how the virtual personal trainer feature works. Basically, the user (green icon) has just to follow the virtual trainer (orange icon). To make even more intuitive the interface, two big arrows (in the right) communicate to the user if he has to slow down or speed up. *Everywhere Run* also provides useful and handy audio cues. So the runner can even avoid to watch the screen.

3.2 Social Interaction

Social interaction is a key point to motivate people to exercise. *Everywhere Run* fosters the interaction among runners and between runners and personal trainers. It permits to share workout recipes so that beginners can easily get them from other runners or by paying a professional coach. In our work we propose some features to promote a continuous interaction with real personal trainers. Indeed, the latter can design a workout plan based on specific user needs and send it to the requesting user, that will receive it inside the application. Then the user has just to start the received workout, using the “virtual personal trainer” feature that will guide him through all the performance. The main advantage is that a beginner runner has not to worry about anything else than just run.

4. EXPERIMENTAL RESULTS

We performed some experiments to evaluate the main software features and its overall usability. [7] and [9] demonstrated that it is sufficient to test a software with no more than five users to verify its usability.

Observing the interaction of five people with the application we were able to detect and correct some troubles. In average our testers reported a positive usability evaluation.

To evaluate the software’s capabilities, we submitted a survey to a group of ten runners that tested it for a while. They rated the application with regard to several characteristics. The score ranged from 0 to a maximum of 5. Figure 2 shows the characteristics under valuation and the results. Runners noticed that working out with predefined goals helps to reach them and it is more engaging.

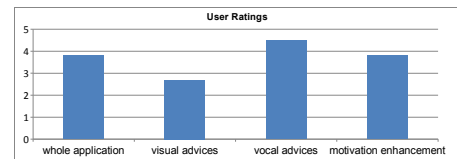


Figure 2: User ratings

5. CONCLUSION AND FUTURE WORK

In this paper we presented *Everywhere Run*, a mobile phone application that attempts to motivate people to exercise regularly in order to stay healthy. It acts as a virtual personal trainer, supporting runners of any levels in their running activities. It is mainly focused on helping not expert people to start working out, promoting the interaction with a real personal trainer in order to get a proper regime and avoid unhealthy patterns. It fosters an active lifestyle leveraging the social interaction among runners and between them and personal trainers. We performed some preliminary tests that showed an average enhancement of the motivation among participants.

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