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Running Recommendations: Personalisation Opportunities for Health and Fitness

Extended Abstract

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ABSTRACT

The history of user modelling, personalisation and recommender systems is, in large part, a web-tale: a story of sites and services learning about users, in order to provide more tailored online experiences. The rapid rise of mobile computing, combined with wearable sensors, has begun to shift the potential for personalisation, from the virtual world of the web, to the physical world in which we live, work, and play.

In our increasingly digitized world almost everything we do creates a record that is stored somewhere, whether we are purchasing a book, calling a friend, or watching a movie. But in the connected world of the *internet of things* (IoT) this no longer limited to our online activities: whether we are exercising in the park, shopping for groceries, or even falling asleep, data continues to be created and captured by a variety of apps and service providers. All of this introduces exciting new application opportunities for user modelling, personalisation, and recommendation, by providing new types of data, and new reasons to harness these data in a host of novel contexts. Of course it also amplifies some critical challenges, especially when it comes to personal data and privacy.

This keynote will consider some of these challenges and opportunities, with a particular emphasis on health and exercise. One example of an open opportunity is embodied in the many and varied ways that people are using data-driven apps to track and share their exercise. This is just the beginning of a new generation of intelligent assistants capable of harnessing personalisation technologies to better support users as they strive to get the most from their exercise, and help them to live healthier more active lifestyles. As a concrete case-study this keynote will draw on recent work to support recreational runners as they train for, plan, and run marathon races.

Marathon running is a popular mass-participation sport that attracts millions of runners, from all walks of life, to our city streets. Running a marathon is hard, but completing the 42.2km course on race-day is just the final stage after months of long, hard training. While a variety of apps exist to support runners — e.g. Strava,

RunKeeper, MapMyRun, to name just a few — most focus on helping users to track and share their activities, but stop short when it comes to more proactively supporting runners as they train and compete. For example, the opportunity exists to automatically create more personalised training programmes that better suit a runner’s lifestyle, fitness goals, and ability; plans that can automatically adapt to a user’s evolving preferences and changing fitness levels. And, as race day approaches, runners can benefit from improved performance predictors, which not only suggest a challenging but achievable finish-time, but that also provide runners with a pacing-plan to help them achieve this time on the day. As the saying goes, few plans survive first contact with the enemy, and marathon pacing plans are no different. Hence runners also require improved in-race feedback and a plan that automatically adjusts to the conditions on the day.

These are just a few examples that harness ideas from user modelling, personalisation, and recommender systems, but apply them in an exercise context, rather than more conventional online settings. At the same time, the features of physical exercise, and the complex lives of users, introduce a range of new challenges to be solved by our community. As a result there is much that the user modelling and personalisation community can bring to the world of personal fitness and performance, but there is also much that the personal fitness community can bring to user modelling and personalisation research. Perhaps together, these communities have the potential to help address some of society’s most significant challenges by helping people to live happier, healthier, more active lives.

CCS CONCEPTS

• **Information systems** → **Personalization**; *Data analytics*;

KEYWORDS

Recommender systems, sports analytics

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