

Mohammad Hossein Nassabi

# ACTIVE AGING THROUGH EXERCISE

**Let's say you are 70 years old and your body isn't as fit as it used to be. Nevertheless, you want to stay active and healthy for as long as possible. One way to achieve that is through exercise. But how do you know which type of exercise is best for you? Perhaps an exercise coaching app could help, PhD researcher Mohammad Hossein Nassabi thought.**

**H**ossein Nassabi, originally from Iran, came to the Netherlands seven years ago. After receiving his Master's and PDEng degree in Computer Science at the TU of Eindhoven, he abandoned his plan to move to Canada and decided to learn more about research in the healthcare domain. Now he aims to provide you with the best possible online physical training system.

## 'They are people, not computer code'

Pursuing a PhD position at the UT didn't come without its challenges, though. Besides juggling a long-distance relationship with his wife in London, Nassabi had to work directly with human subjects for the very first time. And, on top of that, he had to do so in Dutch, a language that was still new to him. 'I had to recruit participants for my experiments and talk to them in my limited Dutch,' says Nassabi. 'Generally, if you work with human subjects, things can become difficult. They are human beings, not computer code. Things can go wrong.'

Nassabi's PhD work is part of the PERSILAA project, focused on using technology to promote active aging and to provide care to older adults. 'We want to create a service to screen for and prevent frailty, a condition which relates to a higher risk of serious health problems,'

explains Nassabi. 'We provide services in different domains: cognitive function, physical activity and nutrition. My project is connected to physical exercise, I work on a coaching system for the elderly.'

## Much joy and moderately difficult

To have a successful system, people need to use it on long-term basis, and so Hossein Nassabi's task is to measure what people think about the exercises the system provides. Apart from using questionnaires, Nassabi has made an app that allows users to try out different exercises and rate them, based on enjoyment and difficulty. 'The idea is to recommend the most appropriate exercises, meaning the ones that give you the most joy and are moderately difficult. In the current web-based system, patients do not give feedback, but if we recommend what they like, they will keep exercising longer,' Nassabi thinks.

The results of Nassabi's research are promising: 'The participants found the app useful. However, we should include more exercises, add more content. Now the users wear a Fitbit, so we can check if they do the exercise, but I would also like to add more sensors and give people real-time feedback on their performance.'

**PhDs are the backbone of our university. But who are they? Every month, we introduce another PhD candidate to you. This month: Mohammad Hossein Nassabi, PhD candidate at the Biomedical Systems and Signals group.**

