

# Young inventors come up with smart sneakers

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Navigation in unfamiliar places is a major problem for residents of large cities. Therefore, the popularity of mobile GPS devices has risen significantly. However, it's nonetheless sometimes difficult for users to understand where to go. In addition, they have to regularly look at the screen to track the route, which distracts them from what's happening around them and increases risks on the road. Pre-university students from the National Research Nuclear University MEPhI in Moscow have created sneakers that can give directions, count a person's steps and tally the number calories burned.

The smart sneakers can lead users to their destination. The idea is simple: When approaching a turn, the right or left shoe vibrates according to the directions.

"We've developed an electronic module that synchronizes with a special mobile app via Bluetooth and receives information about a route. The module performs all the necessary functions without interfering with walking and can be attached to the laces of ordinary sneakers. The user only needs to run the app once, and then put the phone away and enjoy the walk. In addition to navigation, the system can also track the distance traveled, as well as the number of steps and calories burned. This information can be found in the mobile app," said Alexander Pinchuk and Maxim Levkin, the authors of the BiGiPiS project.

The team plans to continue developing the BiGiPiS project because the smart clothing market is growing every year. According to the creators,

it's likely that in a few years, smart sneakers will be comparable to smartwatches in terms of popularity.

Valentin Klimov, deputy director of the Institute of Cyber Intelligent Systems of MEPHI, says, "Our pre-[university students](#) have created rather original projects before. For example, last year, our students developed a multifunctional orientation system for the visually impaired, and won an international children's competition for engineering teams; then they won the Junior competition and took part in the largest international [competition](#): Intel ISEF. Now these guys are our first-year students, and this indicates the high level of our applicants," he said.

According to Klimov, MEPHI students and young scientists are involved in other developments that make life easier for people, including those with disabilities. For example, university employees have created a wheelchair specifically designed for sedentary patients, which is controlled by vision. A student at the Higher Engineering School of MEPHI has created a bionic prosthesis that helps people with an absent limb return to an active life.

"Generally, students who are passionate about technical creativity become the winners of subject olympiads or engineering competitions, which gives them some advantages when they enter our university. As MEPHI students, they can continue engaging in technical creativity with numerous [student](#) groups, take part in international competitions and Olympic games and reach newer heights," Valentin Klimov concluded.

Provided by National Research Nuclear University

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