Researchers develop biometric app for smartphone security

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Credit: National Research Nuclear University

Scientists from the Institute of Cyber Intelligence Systems at the National Research Nuclear University MEPhI (Russia) are developing a mobile app called InCallAuth, which allows a smartphone recognize its owner by a characteristic movement of the hand when answering a call.

The application will use data from the phone's accelerator, gyroscope, and light sensor. Initial device position, the speed of the movement of the hand holding the smartphone, and the change of the phone's position in space are used as parametres. If the application doesn't recognize the owner, it will ask for a password, without which it will be impossible to answer the incoming call.

The mobile app will only work on OC Android devices. The team plans to poffer the app on PlayMarket in February 2018. Users will need to launch the app and raise it to the ear several times, as when answering the call. The app will remember the related parametres and will use the data for the next incoming call.

The supervisor of the developers' team Konstantin Kogos explained that the authentication method has been chosen because of its simplicity.

"Research groups of the Copenhagen University have found out that the hand movement when answering the incoming call is individual for each person," says Konstantin Kogos. Applications on market with similar functions have been downloaded about 20 million times, so there is interest in call protection. These mostly require more active user interactions involving PIN numbers and passwords.

Senior research fellow Stanislav Protasov thinks that people's authentication by hand movements and gait is the future, becomes it's most difficult to counterfeit these parametres.

"Authentication methods by characteristic hand movements have precision of 95 percent, so the error rate will be small, the phone will be blocked les than once out of 20 times," he says. "Research into behavioral biometry is conducted by many research groups, including our laboratory—we study human identification by gait. Such methods are a response reaction to the fact that classical methods of biometrical identification are easily deceived. For example, special glasses can disconcert FRS. It is practically impossible to counterfeit gait or habitual hand movements."

Provided by National Research Nuclear University