

## Now, app to help paralyzed

# IIT-Gn Student Develops Android Application That Helps Disabled Navigate Their Wheelchair

Parth Shastri | TNN

Ahmedabad:A student of the Indian Institute of Technology, Gandhinagar (IIT-Gn) has developed an android-based application to provide people paralysed from neck down greater freedom of movement. Pritesh Sankhe, a final year electrical engineering student, has tried to incorporate the technology of robotics and the simplicity of mobile phones using the android operating system. Though his application is still in the prototype stage, Sankhe is hopeful of developing a fullfledged system for people confined to a wheelchair.

“Smartphones are everywhere nowadays and people are using it innovatively. Efforts have been made to improve human-robot interaction but, at the moment, the best example of this is may be an onboard computer for paralysed people. How about shrinking the computer to the size of a smartphone and employing it for day-to-day tasks?” said Sankhe.

Sankhe, under the supervision of his guide Prof Uttama Lahiri, started work on the framework of his application keeping in mind the fact that its users cannot move their limbs but are capable of limited movement of the head and neck.

“We place a bright-coloured object on the user’s forehead that can be easily identified by the smartphone camera. Then we wrote a software that would track the blob’s movements and replicate it to command the wheelchair,” Sankhe said.

He said that they had successfully ensured that the regular routes taken by the user — like going from the drawing room to the kitchen — can be activated by verbal commands. The wheelchair would check its position along the route and make necessary changes.

Sankhe said that the benefit of a wired system is that it can be constantly updated with habits and usage patterns. In the future, Sankhe wants the application to have properties like JARVIS, the artificial intelligence (AI) assistant of Tony Stark, the Marvel comics superhero known as Ironman, where the smartphone responds to verbal commands of the user.



Pritesh Sankhe (c) explains his device