Students develop device to help blind manuever

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Ben-Gurion University of the Negev students have developed an innovative optical radar system that helps blind people maneuver around obstacles.

The radar system incorporates a computer, two video cameras and a scanning light source to warn the blind of obstacles with audible alerts. The system detects obstacles -- even those overhead -- by scanning the depth of its surroundings, taken from two different angles - similar to that of the human eye.

Developed by two engineering students, Elad Kuperberg and Einav Tasa, under the supervision of Professor Shlomi Arnon, the system was shown for the first time last week as part of the annual conference of projects in the Department of Electrical and Computer Engineering.

The number of vision-impaired people worldwide is estimated to be between 40 and 45 million. Many types of assistance "devices", such as seeing-eye dogs and sticks equipped with sensors are available to help the blind avoid obstacles so they can move around "freely."

"Each system has its disadvantages," according to Prof. Arnon. A seeing-eye dog needs extensive and expensive training, and can only work for an average of seven years. There is also a severe shortage of guide dogs. Additionally, the sensor sticks cannot identify barriers above floor level and their use requires many skills. All of these systems restrict the use of one hand.

"This optical radar device is not only user friendly, but unlike the other solutions it allows the blind to have the use of both of their hands."

Approximately 90 projects developed by 155 BGU engineering students were presented at the conference; some were theoretical and others practical, in the fields of electrical circuits and supply, microelectronics, control, communications, signal processing, computers, electro-magnetics and electro-optics.

"Several of the projects have been carried out in cooperation with private industry, giving students the possibility of easily finding work after graduation," said Prof. Dan Sadot, head of the Department of Electrical and Computer Engineering. BGU produces 45 percent of Israel's engineers, and its annual project day is well attended by industry recruiters and venture capitalists.

Provided by American Associates, Ben-Gurion University of the Negev