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Technion Researchers Develop Spider Robot

capable of searching for survivors in collapsed structures, checking pipe ways and maneuvering through crowded tunnels

Technion researchers have developed a spider robot that is capable of moving through underground cavities, pipe ways and tunnels. It can search for survivors in collapsed buildings. It can also check for and carry out control and maintenance operations on complicated and complex systems in dangerous structures such as atomic reactors. Dr. Amir Shapiro, who developed the robot together with Dr. Shraga Shoal (under the guidance of Prof. Elon Rimon from the Faculty of Mechanical Engineering), said that this is a three-legged, planer robot that moves by grasping onto tunnel walls.

“The robot moves quasi-statically, by pressing against the tunnel walls while moving its free legs to the next location,” explained Dr. Shapiro. “We are presenting an algorithm, called PCG, that is used to plan the grasping points of the spider robot on the tunnel walls.”

He added that the algorithm creates a stepping pattern of the 3-2-3 type, which brings the robot from the starting point to the end using a minimal number of steps.

According to Technion researchers, the spider robot is an additional step toward the planning and creation of ambulatory machines. In the past, Dr. Shapiro developed a robot that plays soccer.

Technion Spokesperson – Amos Levav

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