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(57) Abstract :
Eye-gazing wheelchair is a one-of-a-kind technology used mostly by disabled people who are completely immobile. In this technology, manual wheelchair control is replaced by automated wheelchair control, which is controlled by ocular movement, allowing patients to feel less or no trouble in their movements. A continuous picture is acquired using a camera, which is then subjected to multiple image processing techniques. To identify the location of the eye pupil, the Haar cascade algorithm is used, and the wheelchair moves appropriately because of the image processing approach. For convenient wheelchair movement, a DC motor is fitted to the wheels. The ultrasonic sensor is attached to the wheelchair and detects any obstructions during its movements, causing the wheelchair to halt moving. Wearing a wireless device containing one or more accelerometers on the patient to monitor patient motion, detecting a fall based on observed motions, and automatically seeking assistance for the patient if needed is one technique of automatically asking assistance for a patient. A wheelchair-assist robot is discussed, as well as systems, devices, and techniques for supporting a wheelchair user with ordinary duties or activities at work, at home, and elsewhere. A wheelchair interface component designed to exchange control information with a wheelchair controller is included in one embodiment of the mobile wheelchair-assist robot. A wheelchair-assist robot mount assembly is provided in one embodiment for electrically and physically linking a wheelchair-assist robot to an associated wheelchair, among other things.

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