Prototyping An Autonomous Eye-Controlled System (AECS) using Raspberry-Pi on Wheelchairs

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Abstract

In order to help physically disabled persons to make their life independent, this paper proposes an autonomous eye controlled system (AECS) on wheelchairs. In this work, several OpenCV image processing algorithms are employed to track the eye motion to coordinate the wheelchair moving left, right, and straight forward. We use the Raspberry-Pi B+ board as the system center to process the images and control the motors via GPIO. Experimental results show that the ACES system can be effectively used in the prototype, and outperforms the hand gesture controlled system by 25% processing latency reduction.

References


18. X. Yang, X. Niu, J. Fan, and C. Choi. Mixed-signal systemon- chip (soc) verification based on system verilog model. The 45th Southeastern Symposium on System Theory (SSST


Index Terms

Computer Science          Automated Systems

Keywords

Eye controlled system, gesture controlled system, image processing, OpenCV, Raspberry-Pi