Programming Over AutoCAD for the Proficiency of Disabled Users Using Webcam Based Eye-Tracker

Fernando Luís-Ferreira, João Sarraipa and Ricardo Jardim-Goncalves

From: ASME 2016 International Mechanical Engineering Congress and Exposition
Volume 2: Advanced Manufacturing
Phoenix, Arizona, USA, November 11â€“17, 2016
Conference Sponsors: ASME
Copyright © 2016 by ASME

ABSTRACT

abstract

Mechanical project is a task that requires knowledge about materials and technologies. The need for those skills is supported by mathematical knowledge associated with such technologies. Disabled people can have tremendous skills in terms of calculation and conception of mechanical devices but they may lack on proper access to handle tools that represent parts or mechanisms in terms of graphical design. The present research aims at deploying a setup that can help on such task by allowing drafting in AutoCAD using the eyes. The proposed approach makes use of a laptop camera to act as an eye-tracker, thus avoiding additional hardware costs. The authors envisage new opportunities from this work to future work, including the possibility of disabled people to build 3D real models from the generation of STL models to export to 3D printing devices.

Copyright © 2016 by ASME

Topics: Computer programming, Additive manufacturing, Hardware, Design, Engineering drawing and drafting, Laptop computers