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A Facial Expression Controlled Wheelchair for People with Disabilities

YASSINE Rabhi , MAKREM Mrabet , FARHAT Fnaiech

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Highlights:

- A new intelligent and semi-autonomous control wheelchair is developed in order to overcome the shortcomings of the standard joystick.
- The control of EWC is determined by the emotion of the face selected by the user, while it's going and stopping. This smart control system is suitable for a large patient group, who cannot use the wheelchair manipulated by a standard joystick.
- The user can customize the control by choosing the appropriate facial expressions for him/her using an intelligent algorithm, based on a neural network controller (NN).
- This EWC presents an efficient hands-free option that doesn't require sensors or contraptions attached to the user's body
- A three-dimensional simulation environment has been performed to illustrate the new control devise with extreme security.

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