

Project Paulina: A Human-Machine Interface for Individuals with Limited Mobility and Conclusions from Research and Development

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Abstract : The Paulina Project aims to address the challenges faced by immobilized individuals, such as those with multiple sclerosis, muscle dystrophy, or spinal cord injuries, by developing a flexible hardware and software solution. This paper presents the research and development efforts of our team, which commenced in 2019 and is now in its final stage. Recognizing the diverse needs and limitations of individuals with limited mobility, we conducted in-depth testing with a group of 30 participants. The insights gained from these tests led to the complete redesign of the system. Our presentation covers the initial project ideas, observations from in-situ tests, and the newly developed system that is currently under construction. Moreover, in response to the financial constraints faced by many disabled individuals, we propose an affordable business model for the future commercialization of our invention. Through the Paulina Project, we strive to empower immobilized individuals, providing them with greater independence and improved quality of life.

Keywords : UI, human-machine interface, social inclusion, multiple sclerosis, muscular dystrophy, spinal cord injury, quadriplegic

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