

ABSTRACT

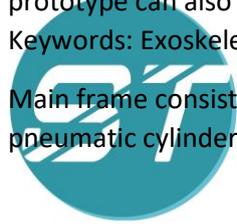
PNEUMATIC OPERATED EXOSKELETON

Abstract

With modern developments of smart portable devices and miniaturization of technologies, society has been provided with computerized assistance for almost every daily activity but the physical aspects have been frequently neglected. It is currently possible to make robots that process information thru neural networks, that identify and mimic facial expressions and that replace manual labour in assembly plants, getting ever closer to skills associated to human beings. In spite of these technological advances being kept close to they remain separate of humans, replacing or providing assistance with other peripheral tasks, not generally adopting a direct physical symbiotic user assistance path. In this dissertation a robotic exoskeleton hand will be described that allows for human-machine bidirectional interaction making it possible to provide physical activities with the electromechanical assistance similarly. This system is designed to mimic the human hands functionalities and biomechanical structure, as well sensing and controlling systems. A partial prototype can also built, using components easily acquired in the market, as a proof of concept.

Keywords: Exoskeleton, prosthetics, robotic hand.

Main frame consists of aluminium frame which can fit over our arm and will be mounted a pneumatic cylinder for external power source



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