

**ELECTROMYOGRAPHY MICROCONTROLLER
LEG BRACE PROCESSING SOFTWARE**

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STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.

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ABSTRACT

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The current state of orthosis and exoskeleton renders both to be completely of different tier of technology; the former being static and the latter highly dynamic. The development of this program and its auxiliary hardware attempt to bridge that gap, giving a degree of adaptability and dynamism towards the very static orthosis. The software starts its focus on knee-ankle-foot orthosis and its scope can widen also to upper limbs. A polio patient volunteered as case basis; data, software and hardware parameter was built into the patient's specification. Polio patients still have electrical potential when activating atrophied muscles, thus the signals are used as input through an electromyography device into a microprocessor. The program produces output into motor and locks. The application to the case patient has been successful and the scope can be widened to include other limbs. Improvements can be made but the program is kept simple to avoid complications. The program works as intended and there is room for further upgrades such as motor limiter and gait correction, which will be intended for future research.

Keywords: poliomyelitis, orthosis, exoskeleton, electromyography, Arduino



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DEDICATION



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