

Embedded Microcontroller Design Project

Prosthetic for Kids

Mission Statement

This team aims to use innovative manufacturing technologies to improve the production, customization, and availability of prosthetic devices for children.

Synopsis

It is very difficult for disadvantaged families to provide a better life for children who rely on prosthetic devices. This project seeks to design and create a more affordable prosthetic hand for children by using innovative engineering technologies to lower the costs of production, allow inexpensive customization of parts, and increase product accessibility.

This project combines the experience and knowledge of six engineering students in the creation of a more affordable prosthetic device for children. The prototype created proves the feasibility and versatility of these devices. This prototype uses servos and microcontrollers attached to muscle sensors to provide smooth actuation of the hand, with at least one degree of freedom. The materials used in the hand and arm have been selected to ensure quality, safety, and reliability at fractions of the price of commercial prosthetics. The modularity of the parts makes it easier to replace damaged components, which reduces maintenance times and the costs of new parts. This design also allows the parts to be created not only by 3D printers, but also common manufacturing facilities, making it possible to manufacture these devices across the world.



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