

Abstract Submitted
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High Functioning, Low-Cost, Myoelectric Prosthetics PAYTON PHELPS, PRESTON ROBINETTE, ELI OWENS, Presbyterian College — There are approximately 40 million people world-wide in need of prosthetics. However, commercial upper prosthetic devices are often prohibitively expensive, costing tens of thousands of dollars. Currently, only about 5% of the people in the world who need a prosthetic have access to one. Highly functional, open source, low cost, 3D printed prosthetic devices will increase the number of people who have access to prosthetics. This project aims to design and develop myoelectric sensing and interpretation technology for integration with naturally controlled 3D printed prosthetics, resulting in low cost upper prosthetics. Myoelectric prosthetics use the potential difference across contracting muscles for control. For this work, we are using machine learning algorithms to classify the signals into individual digit movements. To implement these algorithms, we plan to build a suitable database of signals from various users, increasing the adaptability of the model. Producing an open source, myoelectrically controlled prosthetic that adapts to and learns about its user will present a huge improvement in 3D printed prosthetics and help many people worldwide.

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