

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

“Jnana Sangama” Belagavi – 590 010



PROJECT REPORT ON
“SUBSTITUTE FOR AN AMPUTATED HAND USING
A BIONIC ARM”

Submitted in partial fulfillment of the requirements for the award of degree

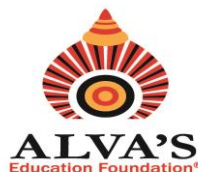
BACHELOR OF ENGINEERING
IN
ELECTRONICS & COMMUNICATION ENGINEERING

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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY

MOODBIDRI – 574 225.

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ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY

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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

CERTIFICATE

Certified that the project work entitled "SUBSTITUTE FOR AN AMPUTATED HAND USING A BIONIC ARM" is a bona fide work carried out by

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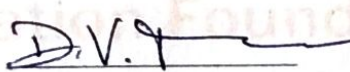
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in partial fulfillment for the award of **BACHELOR OF ENGINEERING** in **ELECTRONICS & COMMUNICATION ENGINEERING** of the **VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI** during the year 2019-2020. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the Bachelor of Engineering Degree.



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ABSTRACT

For people who are physically challenged with the upper limb, performing daily activities, even simple basic tasks can be impossible or very distressing. People who have lost their arm frequently face traumatizing situations and often face difficulties even while walking due to body imbalance. Even though there are many bionic arms available these days, people often discard the idea of buying and using them due to their very high cost. People who earn average wage can't afford the bionic arms due to their complex design. They also give up on the idea of buying these prosthetic devices due to their complications in usage. Many arms require the users to know many complex steps in order to mount these arms onto their body. Due to many reasons, prosthetic arms are not as famous even though they are very helpful.

This project proposes a system that will help the physically challenged to use the bionic arm which is affordable, simple to use and is not a burden in terms of aesthetics. Using simple design tweaks, the number of components used in the bionic arm design can be significantly reduced. This reduction in the number of components drastically brings down the price of the prosthetic arm which is very affordable to a person who is earning an average wage. The reduction of components also reduces the delay in the bio – feedback system of the bionic arm thus giving a natural feel while using the prosthetic device. The device is also 3D printed thus increasing the adaptability and weighs less thus increasing the portability of the device. A portable power supply is also used thus increasing the portability of the prosthetic arm furthermore.