

# **VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**“Jnana Sangama” Belagavi – 590 010**



## **PROJECT REPORT ON “DESIGN AND IMPLEMENTATION OF GESTURE VOCALIZER USING SMART GLOVE”**

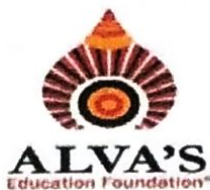
**Submitted in partial fulfillment of the requirements for the award of degree**

**BACHELOR OF ENGINEERING  
IN  
ELECTRONICS & COMMUNICATION ENGINEERING**

**Submitted By**

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**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING  
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**2020-2021**

# ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY

MOODBIDRI – 574 225

(Affiliated to VTU, BELAGAVI)

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

## CERTIFICATE

*Certified that the project work entitled "DESIGN AND IMPLEMENTATION OF GESTURE VOCALIZER USING SMART GLOVE" is a bona fide work carried out by*

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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 2020–2021. 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.



Signature of the Guide

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## ABSTRACT

People have a characteristic capacity to see, listen and exchange information with their outer environment. Lamentably, there are a few people who are differently-abled and won't be able to utilize their senses to the most ideal degree. Such individuals rely upon different methods for interaction like gesture-based communication. This presents a significant barrier for individuals in the deaf and mute networks when they attempt to take part in association with others, particularly in their instructive, social and professional working atmosphere. Hence, it is important to have advanced gesture recognition to make communication between both parties effective and efficient, which could help diversely abled individuals in their day-by-day lives by making an interpretation of their signals into significant English letters and words.

This project proposes a system that will help the deaf and mute to use a device that can translate their gestures into text and voice in the form of the data glove which is affordable, simple to use and is not a burden in terms of aesthetics. Using Arduino, flex sensors, accelerometer and an app that can translate the received gestures into text and voice, the number of components used in the traditional data glove can be significantly reduced. This reduction in the number of components and usage of low cost elements drastically reduces the price of the data glove which is very affordable to a person who is earning an average wage. The technology of gesture conversion using computer vision requires proper environment to be setup to capture the gestures along with a lot of computations. Additionally, any device with this technology is not portable. Hence data glove is chosen over computer vision technology.