

# **VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

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



## **PROJECT REPORT ON DEVELOPMENT OF AUTOMATIC KANNADA SPEECH RECOGNITION SYSTEM**

**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**

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# 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 "DEVELOPMENT OF AUTOMATIC KANNADA SPEECH RECOGNITION SYSTEM" 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 2018-2019. 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

Speech recognition is a software invention that allows the user to interact with their mobile devices through speech. It is simply an application that enables a machine to single out words or phrases in a spoken language, thereafter it converts them to a machine-readable format. Speech recognition is designed with the sole purpose of creating text from speech, so instead of typing through a keypad, users talk to the device which has programs that type the text. In this project, the system for Automatic Kannada speech recognition is developed. Kannada is a language spoken in India predominantly in the state of Karnataka and is spoken by about 60 million speakers. This language is also spoken in neighboring states like Maharashtra, Tamil Nadu, Andra Pradesh, Goa etc. However, there is only little research reported on Kannada speech processing compared to other languages of similar importance.

The implementation of speech recognition system for Kannada words has been carried out using Hidden Markov Toolkit in the Linux platform. The criteria for designing Automatic speech recognition system for Kannada speech are data preparation, pre-processing filter, feature extraction techniques, training and testing the system for performance evaluation. The system to be built, requires all of the speech recorded from scratch and to do this, scripts are needed to prompt for each sentence. The training data includes the prompt scripts which will be used in conjunction with a pronunciation dictionary to provide the initial phone level transcriptions needed to start the HMM training process. The Testing is done after the completion of training in order to evaluate the performance of the system. This system has several applications in the field of voice control, command control, automation and can be interfaced with the other applications which takes text as input.