“IMPLEMENTATION OF TINY MACHINE LEARNING MODELS ON ARDUINO 33-BLE FOR GESTURE CONTROL AND SPEECH RECOGNITION”

ABSTRACT

“Machine learning aware architectures, frameworks, techniques, tools, and approaches which are capable of performing on-device analytics for a variety of sensing modalities (vision, audio, speech, motion,chemical,physical, textual, cognitive) at mW (or below) power range setting, while targeting predominately battery-operated embedded edge devices suitable for implementation at large scale use cases preferable in the IoT or wireless sensor network domain”

OBJECTIVES

GETTING STARTED WITH TINY MACHINE LEARNING

- Login to EDGE IMPULSE
- Create an undertaking
- Select the ARDUINO Board in project data
- Collect the raw data through DATA ACQUISITION
- After the information is gathered , create an IMPULSE
- Select the Spectral Analyzer and the Classification used corresponding to the project requirements.
- Classification results are shown in Confusion matrix.
- Ensure that the precision is above 80%.
- Start Training the model
- Sampling is detected by the model after deployment

GESTURE RECOGNITION WITH RGB LED

PROJECT OUTCOMES

- The hand signal acknowledgement framework that is intended to have the option to perceive hand motions progressively, this is an image of the looking at a climate where a fashioner can portray by controlling pointer utilizing a couple of digital gloves and can cooperate with the item 3D space.
- Speech recognition framework will be all the more broadly utilized from now on.
- An assortment of discourse acknowledgement items would show up on the lookout. It is hard to delivered a discourse acknowledgement framework work precisely like a human.
- Presently the discourse acknowledgement must be acquainted into individuals lives with bring more accommodation.
- The hand motions addressing numbers can likewise be changed over into orders to perform related undertaking continuously.

GUIDE

Dr. Rajashri Khanai

STUDENTS

NAME	SEM	USN
C Spoorthi	V	2KL20CS021
S Kavya	V	2KL20CS072
Varun Rakshe	V	2KL20CS113
Suhas Jadhav	V	2KL20CS104
Shreyas Goral	V	2KL20EC082