TRABALHO FINAL

IESTI01 - TINYML - APRENDIZADO DE MÁQUINA APLICADO PARA DISPOSITIVOS IOT EMBARCADOS

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Project Name: Identification Emotions

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Team member names, number:
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Project Objectives (Goal): The idea is identify human emotions throughthe RGB colors of the LED.

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Longer project description:
The idea of the project is to predict which emotion the person is feeling (anger, happiness or sadness) through a database of sound words.This Technology Helps to Build a Companion Robots,This Robots Can be Friendly and Have The Ability to Recognize Users' Emotions and Needs, and to Act Accordingly.The Datasets contain 23730 English Words and through RGB colors of the TinyML LEDs,we can determine the emotions:

- RED: Anger
- Blue: Sadness
- Green:Happiness

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References (including other code or data), sources of inspiration :
https://www.kaggle.com/iwilldoit/emotions-sensor-data-set/code

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Descriptions of the following, at whatever depth the team feels appropriates

a. Block Diagram

b. Hardware to be utilized

Arduino Nano 33 BLE sense (cortex-M4F-64MHz)

c. Data collection

https://www.kaggle.com/iwilldoit/emotions-sensor-data-set

d. Preprocessing

e. Model design

f. Optimizations

Adam

g. In system inference (Deploy)

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Issues or roadblocks the team envision and potential solutions:

- Bad Quality of Audio TinyML: Errors in identifying of sound.
- Audio noises: Re-Training of Dataset with noises

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The top unresolved question(s) the team have at this point:

- Quality of Dataset
- Quality of audio of Tinyml
- If we will work with this dataset