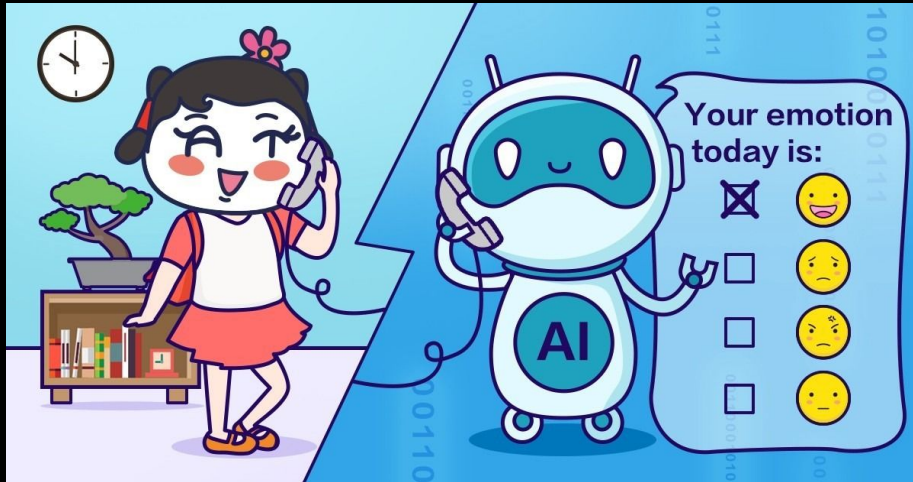


Speech Emotion Recognition



By:-

Parth

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Kanishk Gupta

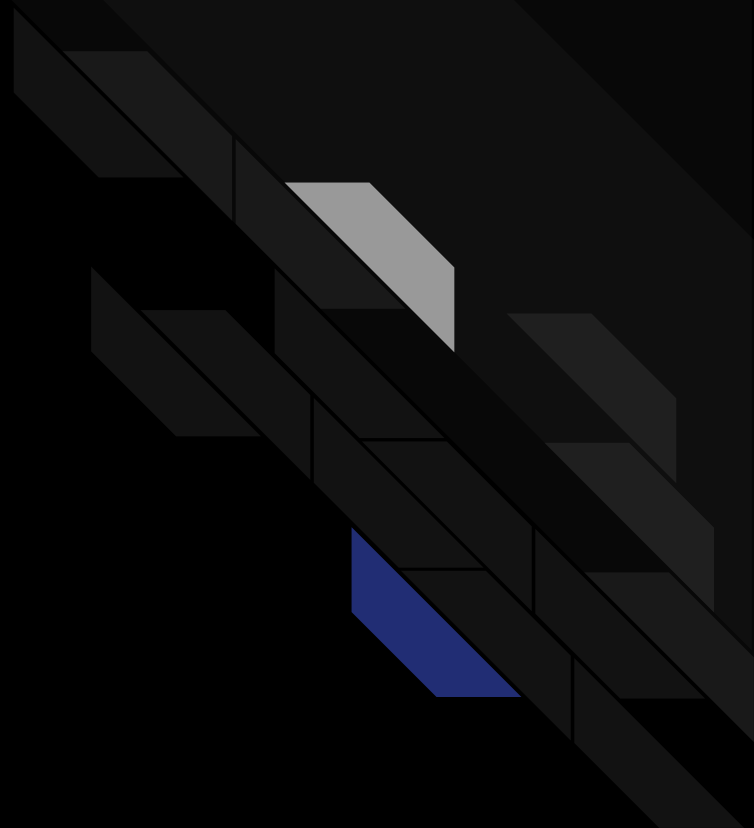
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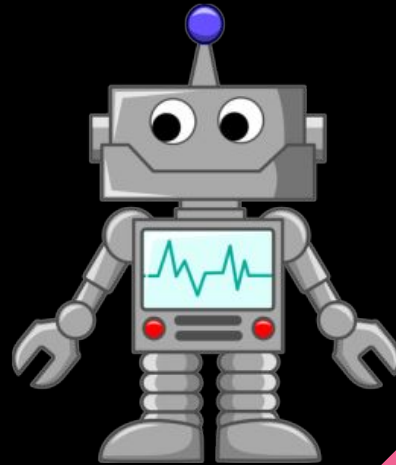
Contents:

1. Introduction
2. SER
3. Project Objectives Achieved
4. SER 2.0
5. Objectives of SER 2.0
6. Expected challenges
7. Dataset
8. User Interface
9. Hardware
10. Project Pipeline
11. Tools/Technologies
12. References



Introduction

What makes us different from machines?



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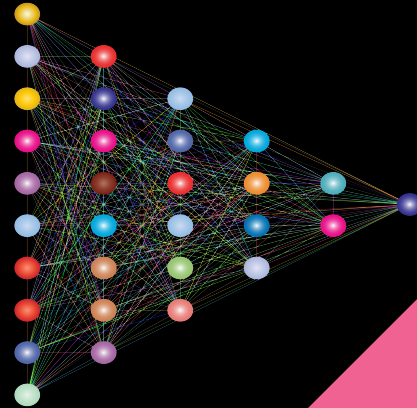
Introduction

“The best and most beautiful things in the world cannot be seen or even touched. They must be felt with the heart.”

- Helen Keller



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SER

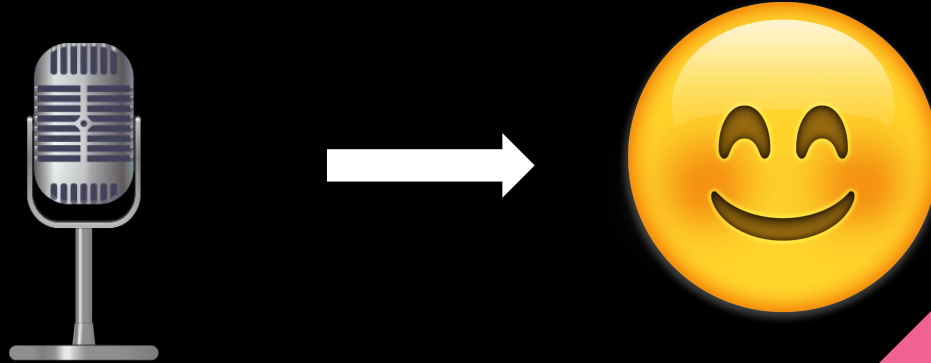


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What is SER ?

- SER stands for Speech Emotion Recognition
- Aims to recognize the underlying emotional state of speaker



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Project Objectives Achieved

- Built an end-to-end hardware-software solution
- Extracted features such as pitch, loudness, and cepstral coefficients
- Built 1-D CNN based DL Model to recognize emotions of the speaker
- Created a web app and deployed the application
- Displayed model's output on Arduino LCD

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PRESENTING
The All New

SER 2.0

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Objectives Of SER 2.0

- Redefine Algorithm
- Improve Model Accuracy
- Decrease Latency in response
- Real Time Emotion Recognition
- Make Model More Generalized
- Add Speech-To-Text feature
- Add Live recording Feature in UI
- Develop New interactive UI/UX
- Enhance hardware

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Expected Challenges

- Augmenting audio datasets for increasing generalizability
- Advanced Feature Selection
- Designing classifier with higher precision and recall
- Integrating all modules to a centralized system.

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Dataset

- RAVDESS Dataset, TESS Dataset
- Ryerson Audio-Visual Database of Emotional Speech and Song
- 7356 recording created by 24 professional actors
- Includes calm, happy, sad, angry, fearful, surprise, and disgust expressions



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User Interface

- UI to record/input human voice
- To Implement ML Model
- Send/Receive Data to arduino UNO.
- Manage Inputs
- Efficient Load balancing
- Display result



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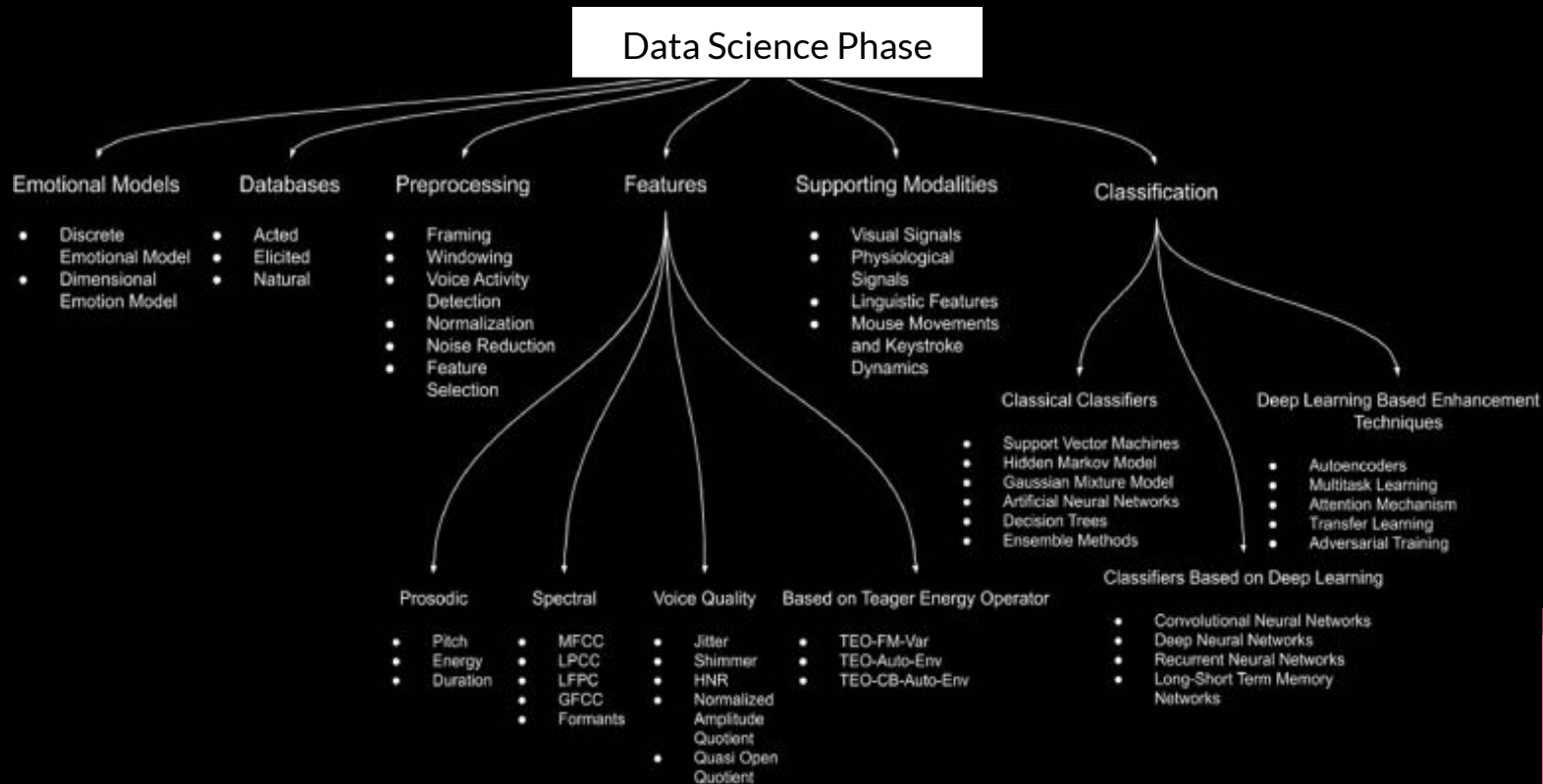
HARDWARE

- Communicating with the model
- Displaying the type of emotion detected.
- Showing the status of the process.
- Speaker for conveying the result.
- Interacting with User Interface

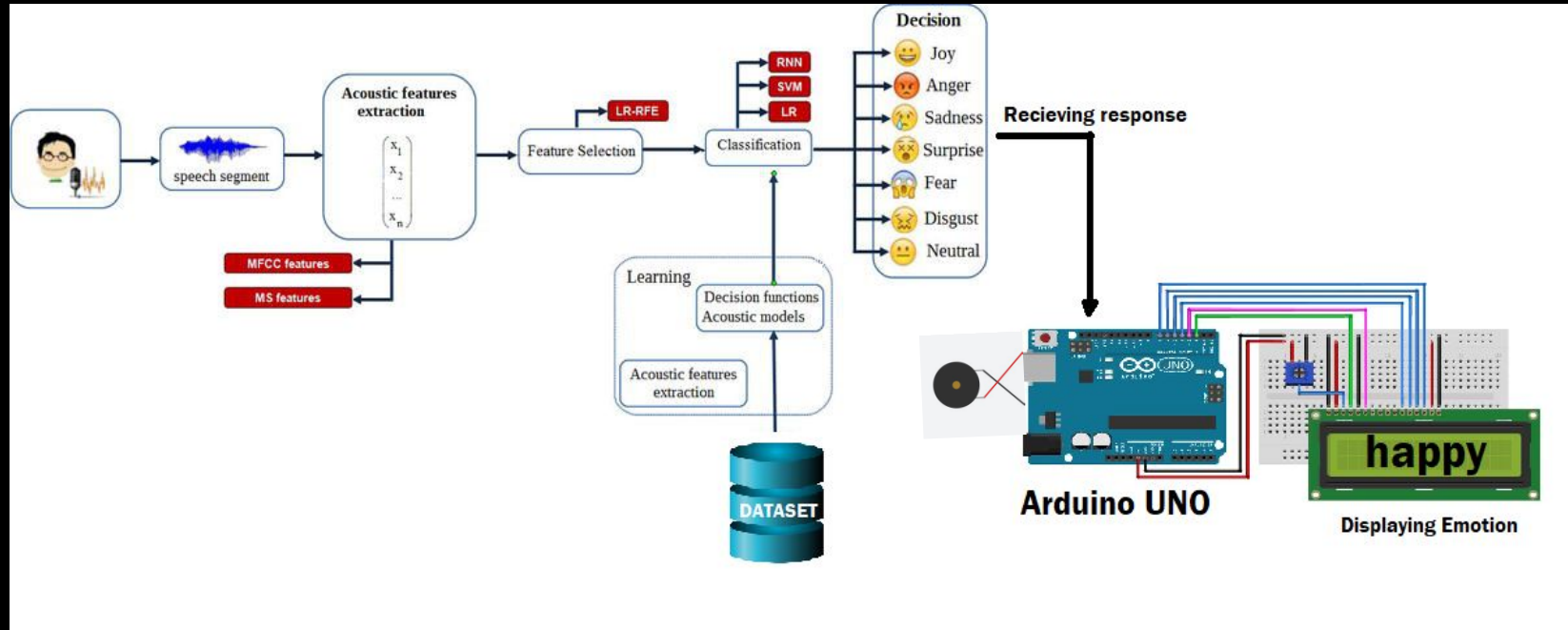


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Overview of Data Science Phase



Project Pipeline



TOOLS \ TECHNOLOGY

- AWS Cloud:
- Numpy
- Pandas
- TensorFlow
- PyTorch
- Librosa
- Django
- ReactJS
- Pyfirmata
- Arduino IDE

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A large, irregular splash of teal and blue watercolor paint serves as the background for the text. The colors vary in intensity, with darker blues in the center and lighter teals towards the edges, creating a soft, painterly effect.

Thank You