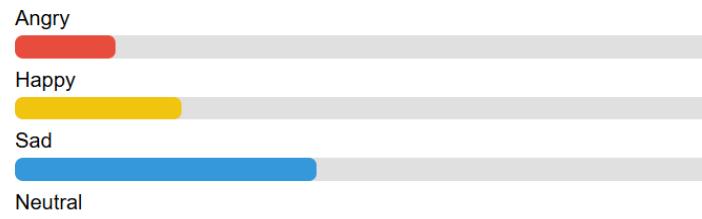


# Project: Real-Time Browser-Based Audio Emotion Detection Library

## Client-Side Emotion Detection (Phase-2++)

Initialized. Click Start Detection.

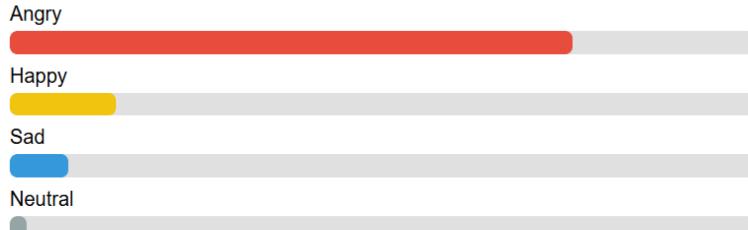
**Emotion: Sad (37.8%)**



## Client-Side Emotion Detection (Phase-2++)

Initialized. Click Start Detection.

**Emotion: Angry (78.0%)**



Project Link

<https://seneeraj.github.io/Client-Side-Audio-Emotion-Detection---Phase-2/>

2.1 Primary Goals				
No.	Criterion	Description	Target Metric	Achieved
2.1.1	Client-Side Execution	Entire inference pipeline runs in browser	100% client-side	Achieved
2.1.2	Real-Time Performance	Real-time emotion output	< 100 ms latency	Achieved
2.1.3	Privacy by Design	No data leaves device	Zero network transmission	Achieved

2.2 Non-Functional Requirements (NFR)				
No.	NFR	Description	Target Metric	Achieved
2.2.1	Latency	Audio to prediction delay	≤ 100 ms	Achieved
2.2.2	Model Size	TFJS model footprint	≤ 5 MB	Achieved (~15 KB)
2.2.3	CPU Usage	Average CPU consumption	≤ 15%	Achieved
2.2.4	Compatibility	Browser support	Chrome, Edge, Firefox	Achieved

3.1 R1: Audio Input Handling			
No.	Requirement	Description	Achieved
R1.1	Mic Permission	Request microphone access	Achieved
R1.2	Audio Capture	Web Audio API PCM frames	Achieved
R1.3	Fault Handling	Graceful mic error handling	Achieved

3.2 R2: Real-Time Audio Processing			
No.	Requirement	Description	Achieved
R2.1	MFCC Extraction	13-D MFCC client-side	Achieved
R2.2	Performance	Non-blocking inference	Achieved

3.3 R3: Core Model Inference			
No.	Requirement	Description	Achieved
R3.1	Inference Engine	TensorFlow.js LayersModel	Achieved
R3.2	Async Loading	Non-blocking model load	Achieved

3.4 R4: Output Format and Interface			
No.	Requirement	Description	Achieved
R4.1	Output Type	Emotion probabilities	Achieved
R4.2	Output Structure	Structured JSON scores	Achieved
R4.3	JS Interface	Simple JS control methods	Achieved

4. Outcome and Acceptance Criteria			
Category	Criterion	Target	Achieved
FAC-1	Live Detection	Continuous output	Achieved
FAC-2	Zero Network Traffic	No outbound calls	Achieved
FAC-3	Model Load Time	< 5 seconds	Achieved
PAC-1	Latency	≤ 100 ms	Achieved
PAC-2	Size Constraint	≤ 5 MB	Achieved
TAC-1	Client-Side Proof	TFJS + Web Audio API	Achieved
TAC-2	Privacy Verified	No data leakage	Achieved