

GOVERNMENT ENGINEERING OF COLLEGE
CHHATRAPATI SAMBHAJINAGAR
(An Autonomous Institute of Government of Maharashtra)
DEPARTMENT OF INFORMATION TECHNOLOGY

CERTIFICATE

This is to Certify that,

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Have successfully completed project work titled “Infant Cry Classification” During the academic year 2025-2026, in partial fulfilment of “Engineering in Information Technology” of Government college of Engineering of Aurangabad.

To the best of my knowledge and belief this project work has not been submitted elsewhere.

DATE:

Project Guide

Dr. Shilpa Kabra

Head of the Department

Prof. A. N. Ghule.

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Abstract

*The Infant Cry Detection System is an innovative solution designed to help caregivers quickly understand the needs of an infant by analyzing their cries. Since crying is an infant's primary form of communication, it can often be challenging for caregivers to distinguish between the different types of cries, such as hunger, discomfort, or tiredness. This system leverages **Deep Learning (DL)**, a powerful branch of artificial intelligence, to automatically classify and interpret the meaning behind these cries.*

*The system works by using a microphone to capture the sound of the infant's cry. The recorded audio is then processed, and a **deep learning model** is used to analyze key features like pitch, tone, duration, and intensity of the cry. These features are critical for identifying the cause of the cry. The deep learning model is trained using a large dataset of infant cries, enabling it to distinguish between various cry categories with high accuracy.*

Once the cry is processed, the system provides immediate feedback to the caregiver, either through a mobile application or a smart monitoring system. The caregiver is notified if the baby is likely hungry, needs a diaper change, is in pain, or simply needs attention. In addition, the system can be integrated with other smart home devices, such as adjusting room temperature or playing calming sounds, to further help soothe the baby.

This technology not only enhances the caregiving experience by reducing response time, but also helps reduce the stress and uncertainty that often accompanies infant care. As the system continues to learn and adapt through user interaction, its accuracy and efficiency improve over time, making it a valuable tool for new parents and caregivers.

In the future, the system could also support multi-language capabilities, provide long-term data analysis, and offer personalized recommendations for each baby's unique crying patterns. The goal is to make caregiving more efficient, provide timely responses to infant needs, and ultimately improve the overall well-being of both the infant and caregiver.

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