SUICIDAL TENDENCIES DETECTION USING CNN AND RANDOM FOREST ALGORITHM

Major project submitted in partial fulfillment of the requirement for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

COMPUTER SCIENCE AND ENGINEERING

Under the esteemed guidance of

Mrs. V. Sravanthi
Sr. Assistant Professor

By

Lavudya Revanth (21R11A05H4)
Sende Sai Kumar (21R11A05K6)
Gujja Mokshith (21R11A05G5)

Department of Computer Science and Engineering

Geethanjali College of Engineering and Technology (Autonomous)

Accredited by NAAC with A+ Grade: B.Tech. CSE, EEE, ECE accredited by NBA Sy. No: 33 & 34, Cheeryal (V), Keesara (M), Medchal District, Telangana – 501301

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Accredited by NAAC with A$^+$ Grade : B.Tech. CSE, EEE, ECE accredited by NBA Sy. No: 33 & 34, Cheeryal (V), Keesara (M), Medchal District, Telangana – 501301

Department of Computer Science and Engineering

Certificate

This is to certify that the B.Tech Major Project report entitled **"SUICIDAL TENDENCIES DETECTION USING CNN AND RANDOM FOREST ALGORITHM"** is a bonafide work done by **Lavudya Revanth (21R11A05H4), Sende Sai Kumar (21R11A05K6), Gujja Mokshith (21R11A05G5),** in partial fulfillment of the requirement of the award for the degree of Bachelor of Technology in "**Computer Science and Engineering**" from Jawaharlal Nehru Technological University, Hyderabad during the year 2024-2025.

Internal Guide	**HoD – CSE**
Mrs V. Sravanthi	**Dr. E. Ravindra**
Sr. Assistant Professor	Professor

External Examiner

Geethanjali College of Engineering and Technology (Autonomous)

Accredited by NAAC with A^{+} Grade : B.Tech. CSE, EEE, ECE accredited by NBA Sy. No: 33 & 34, Cheeryal (V), Keesara (M), Medchal District, Telangana – 501301

Department of Computer Science and Engineering

DECLARATION BY THE CANDIDATE

We, **Lavudya Revanth, Sende Sai Kumar, Gujja Mokshith** bearing Roll Nos. **21R11A05H4, 21R11A05K6, 21R11A05G5,** hereby declare that the project report entitled **"SUICIDAL TENDENCIES DETECTION USING CNN AND RANDOM FOREST ALGORITHM"** is done under the guidance of **Mrs. V. Sravanthi, Sr. Assistant Professor,** Department of Computer Science and Engineering, Geethanjali College of Engineering and Technology, is submitted in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology in Computer Science and Engineering**.

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Lavudya Revanth (21R11A05H4),
Sende Sai Kumar (21R11A05K6),
Gujja Mokshith(21R11A05G5),
Department of CSE,
Geethanjali College of Engineering and Technology,
Cheeryal.

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Lavudya Revanth (21R11A05H4),
Sende Sai Kumar (21R11A05K6),
Gujja Mokshith(21R11A05G5),
Department of Computer Science and Engineering
Geethanjali College of Engineering and Technology

ABSTRACT

This project presents a multifaceted approach to detecting suicidal tendencies by integrating Human-Computer Interaction, Natural Language Processing, and voice pattern analysis. The system captures and analyzes facial gestures, speech patterns, and messaging behaviours to identify early signs of suicidal intent. By employing machine learning techniques such as Convolutional Neural Networks (CNN) and Random Forest, the model processes data from various sources, including social media and messaging platforms. The use of a correlation ensures reliable predictions across multiple data types, significantly improving detection accuracy compared to existing single-method approaches. This system aims to provide timely alerts to family and healthcare professionals, potentially preventing suicidal actions.

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LIST OF ABBREVIATIONS

Abbreviation	**Full Form**
WHO	World Health Organization
NLP	Natural language processing
FER	Facial Expression Recognition
MFCC	Mel Frequency Cepstral Coefficients
RGB	Red Green Blue
LSTM	Long Short-Term Memory
SDLC	Software Development Life Cycle
HCI	Human-Computer Interaction
JSON	JavaScript Object Notation
PC	Personal Computer
GPU	Graphics Processing Unit
SRS	Software Requirements Specification
GB	Gigabyte
RAM	Random Access Memory
UML	Unified Modelling Language
OMG	Object Management Group
API	Application Programming Interface
UI	User Interface
HTML	Hyper Text Markup Language
kHz	Kilohertz
IEEE	Institute of Electrical and Electronics Engineers
OWASP	Open Web Application Security Project
IEC	International Electrotechnical Commission

ISO	International Organization for Standardization
DFD	Data Flow Diagrams
ERD	Entity-Relationship Diagrams

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