

**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

**SCHOOL OF COMPUTING**

**ABSTRACT SUBMISSION FORM**

**10214CS701– MAJOR PROJECT**

**ACADEMIC YEAR: 2024-2025**

**SEMESTER: WINTER**

|  |  |  |  |
| --- | --- | --- | --- |
| Name of the Student | Student 1 | Student 2 | Student 3 |
| VTU No | 20274 | **21244** | **20372** |
| Reg. No | 21UECS0373 | 21UECS0663 | 21UECS0279 |
| Dept with Spl | CSE | CSE | CSE |
| TITLE OF THE PROJECT: | “VISIONGUARD : ML-DRIVEN MASK DETCETION FOR PUBLIC SAFETY “ | | |
| **Name of the Supervisor : Dr.S.Selvin Ebenezer** | | | |
| ABSTRACT | | | |
| In recent years, the need for enhanced public safety measures has become increasingly evident, particularly due to health crises such as pandemics that have reshaped societal behaviors. This paper presents "VISIONGUARD," a cutting-edge machine learning (ML) solution designed to automatically detect mask usage in public areas, significantly contributing to health and safety protocols. VISIONGUARD utilizes advanced computer vision techniques, specifically employing convolutional neural networks (CNNs), to analyze video feeds from surveillance cameras positioned in various public spaces.  The development of the VISIONGUARD system involved training a robust ML model on a diverse dataset comprising images and videos captured under different environmental conditions, including varying lighting and crowd densities. This diverse training approach enables the model to recognize and distinguish between masked and unmasked individuals with high accuracy in real-time.  One of the critical features of VISIONGUARD is its capability to provide immediate alerts to security personnel, allowing for swift action in enforcing mask-wearing mandates. The system's low latency and high detection rates make it a practical and efficient tool for integration into existing public safety infrastructures.  Moreover, this paper addresses the ethical implications of deploying such technology, emphasizing the importance of privacy preservation and compliance with legal standards. We discuss strategies for ensuring that the data collected through surveillance is handled responsibly and transparently.  Through rigorous testing and evaluation, VISIONGUARD has demonstrated significant potential in aiding public health initiatives, fostering safer environments in urban settings. This work illustrates the transformative impact of artificial intelligence and machine learning in addressing modern challenges, offering insights into future applications of technology for improved public safety and compliance in communal spaces. Ultimately, VISIONGUARD serves not only as a technological advancement but also as a proactive step towards ensuring community well-being. | | | |

**STUDENT PROJECT SUPERVISOR PROJECT CO-ORDINATOR**