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Vishwothamanagar, Bantakal – 574 115, Udupi, Karnataka, India

# DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

**APPLICATION FOR THE ALLOTMENT OF SEMINAR TOPIC**

**Name: SHANE SHERVIN**

**USN: 4MW20CS071**

**Proposed Topics**:

|  |
| --- |
| 1) Topic: Automated Face Recognition Using AI/ML **Reference paper:**  [1] K. J. Lakshmi, T. K. Kumar and S. Warrier, "Automated Face Recognition by Smart Security System Using AI & ML Algorithms," 2021 5th International Conference on Trends in Electronics and Informatics (ICOEI), Tirunelveli, India, 2021, pp. 1363-1368, doi: 10.1109/ICOEI51242.2021.9452878.  [2] N. Infantia H, S. G, K. M, P. A, S. Gomathi and J. Sivapriya, "Security System to Analyze, Recognize and Alert in Real Time using AI-Models," 2023 Second International Conference on Electronics and Renewable Systems (ICEARS), Tuticorin, India, 2023, pp. 754-760, doi: 10.1109/ICEARS56392.2023.10085421.  [3] G. Pangestu, H. L. Hendric Spits Warnars, B. Soewito and F. L. Gaol, "The Use of Deep and Machine Learning for Face Expression Recognition: A Literature Review," 2022 International Conference on Information Management and Technology (ICIMTech), Semarang, Indonesia, 2022, pp. 201-206, doi: 10.1109/ICIMTech55957.2022.9915257. |
| 2) **Topic:** Fire Detection using image processing  **Reference paper:**   1. Research on Fire Detection and Image Information Processing System Based on Image Processing - Wentao Xiong – 2020 2. Image fire detection algorithms based on convolutional neural networks - Wangda Zhao - 2020 3. Detection of fire using image processing techniques with LUV color space - Divya Pritam; Jaya H. Dewan - 2017 4. Detection of Fire with Image Processing using Backpropagation Method - Muhammad Iqbal; Budhi Irawan; Casi Setianingsih – 2019 |

Dated Signature of the student:

**FOR DEPT. USE ONLY**:

1. Topic allotted:

2.

Allotment of serial number & presentation date:

***Seminar Coordinator***

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**ABSTRACT:**

1. **Automated Face Recognition Using AI/ML**

Automated Face Recognition Using AI/ML represents a pioneering endeavor in the realm of identity verification systems, harnessing the capabilities of Artificial Intelligence (AI) and Machine Learning (ML) to develop a highly accurate and efficient solution. By employing deep learning algorithms, the system excels in extracting intricate facial features and patterns, enabling precise identification across diverse environmental conditions and facial expressions. Integrated facial detection, feature extraction, and classification modules streamline the recognition process, facilitating real-time responses. Moreover, stringent privacy measures, including anonymization techniques and robust storage protocols, ensure the safeguarding of sensitive data. Through rigorous validation against existing benchmarks, the system demonstrates its reliability, scalability, and applicability across a wide array of industries, promising to enhance security and streamline identity verification processes in the digital age.

1. **Fire Detection using image processing**

In the modern world, extinguishers must be installed in every building. However, when a fire breaks out, there is uncertainty and confusion on whether to evacuate the area or activate the extinguisher and put out the flames. Early detection of fire is necessary to prevent the further loss of life and property. The existing systems for detecting and extinguishing a fire are the smoke sensor and sprinkler systems, which detect fire from smoke and are programmed to activate when the temperature reaches a predetermined threshold. Overall, with this type of framework, there are several disadvantages such as bogus caution, space inclusion, signal transmission, and alarm postponement. In this paper, upon conducting an extensive comparative analysis on the existing literature, a model for fire detection and extinguishing using image processing and machine learning is proposed. This technology can be used to monitor high-risk zones where there is always the possibility of a fire. The objective of this work is to provide a reliable, secure, and shrewd framework to lessen constraints and deficiencies like false alarms, which cause fear among people with the use of various advances, as well as to make the area safe from the perilous fire.

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