IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.301
Volume 3, Issue 2, November 2023

AI Face Mask Detection System: A Comprehensive Analysis and Implementation

Kalidas Bhavale[1], Seerat Modak[2], Shruti A Yadav[3], Rutuja R Ugale[4], Prerana P Mhatre[5]
Associate Professor, Department of Computer Engineering[1]
Students, Department of Computer Engineering[2,3,4,5]
Chhatrapati Shivaji Maharaj Institute of Technology, Panvel, Maharashtra, India

Abstract: *In the face of the ongoing global pandemic, wearing face masks has become a crucial preventive measure. To ensure public safety, there is a pressing need for monitoring of mask compliance in public spaces. This paper presents a detailed exploration and implementation of an Artificial Intelligence (AI) based Face Mask Detection System. The proposed system leverages state-of-the-art computer vision techniques and deep learning algorithms to accurately identify individuals wearing masks and those without masks. The system architecture involves several key components. First, an image acquisition module captures real-time video from surveillance cameras. Next, a pre-processing stage enhances image quality and reduces noise, ensuring necessary input for the AI model. The heart of the system lies in the Convolutional Neural Network (CNN) model, trained on an extensive dataset comprising diverse facial images with and without masks. Transfer learning techniques are employed, utilizing pre-trained models such as ResNet and MobileNet, to enhance the efficiency of mask detection*

Keywords: Artificial Intelligence, Face Mask Detection, Computer Vision, Deep Learning, Convolutional Neural Networks

REFERENCES

[1]http://cs230.stanford.edu/projects_winter_2021/reports/70747149.pdf
[2]https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8223067/#:~:text=Face%20mask%20detection%20refers%20to,of%20security%2C%20authentication%20and%20surveillance.
[3]https://www.sciencedirect.com/science/article/pii/S2772528621000352
[4]https://link.springer.com/article/10.1007/s11042-022-13697-z
[5]https://www.hindawi.com/journals/sp/2021/8340779/
[6]https://ieeexplore.ieee.org/abstract/document/9358653
[7]https://link.springer.com/article/10.1007/s11042-022-12166-x
[8]https://ieeexplore.ieee.org/abstract/document/9342585
[9]https://www.irjmets.com/uploadedfiles/paper/issue_5_may_2022/23604/final/fin_irjmets1652986451.pdf
[10]https://scholarworks.calstate.edu/downloads/wp988p69r