

# Face Mask Detection using CNN Deep Learning - Research Survey Papers

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## Literature Review Table

This document contains a comprehensive tabulated list of 20 research papers related to Face Mask Detection using Convolutional Neural Networks (CNN) and Deep Learning algorithms. The table includes paper titles, authors, methodologies, key findings, and accuracy results.

S.No	Paper Title	Authors	Year	Journal/Conference	Methodology	Key Findings	Accuracy/Results	Type
1	Deep learning techniques for detecting and recognizing face masks: A survey	Alturki, R., Alharbi, M., AlAnzi, F., & Albahli, S.	2022	Frontiers in Public Health	Survey of CNN, MFR, OFR techniques	Comprehensive review of deep learning approaches	Survey Paper	Survey Paper
2	A Comprehensive Survey of Masked Faces: Recognition, Detection, and Unmasking	Mahmoud, M., Kasem, M. S., & Kang, H. S.	2024	ArXiv	Comprehensive analysis of MFR, FMR, and FU techniques	Analysis of deep learning methodologies for masked face challenges	Survey Paper	Survey Paper
3	Face mask detection using deep learning: An approach to reduce risk of Coronavirus spread	Sethi, S., Kathuria, M., & Kaushik, T.	2021	Journal of Biomedical Informatics	Ensemble of single and two stage detectors with ResNet50	Improved precision and recall performance	98.2%	Research Paper
4	Face mask detection using deep convolutional neural network	Umer, M., Ashraf, I., Mehmood, A., et al.	2023	Image and Vision Computing	CNN, YOLO v3, Faster R-CNN with custom dataset	High performance on MAFA and MOXA	High Performance	Research Paper

	and multi-stage image processing					datasets with custom CNN		
5	A convolutional neural network for face mask detection in crowded scenes	Bose, S., Mondal, B., Sarkar, R., & Basu, S.	2023	Signal Processing: Image Communication	CNN with YOLOv3 and MobileNetV2	Effective detection in crowded environments	99.2%, F1-score: 0.99	Research Paper
6	Enhancing Facemask Detection using Deep learning Models	Abdirahman, A. A., Hashi, A. O., Dahir, U. M., et al.	2023	International Journal of Advanced Computer Science and Applications	MobileNet, ResNet50, Inceptionv3, VGG19 comparison	ResNet50 achieved superior performance	99.4% precision, 98.6% recall	Research Paper
7	Face Mask Detection System Using Deep Learning	Bera, A.	2023	Project Report - Bangabasi Morning College	MobileNetV2 with real-time processing	Real-time face mask detection system with high accuracy	High Accuracy	Project Report
8	Face mask detection using convolutional neural network	Project Team - JUIT	2024	Jaypee University Project Report	Two-stage CNN with face detection and mask classification	Real-time monitoring achieved with low loss	96% accuracy, 11% loss	Project Report
9	Face Mask Detection System	Various Authors	2022	International Journal of Research and Analytical Reviews	MobileNetV2 with dataset preprocessing	High accuracy dependent on dataset quality and preprocessing	Dataset Dependent	Research Paper
10	Face Mask Detection Using CNN Techniques and Machine Learning	Date, M. S., Thoke, S. K., Chatur, S. A., et al.	2022	International Journal of Scientific Development and Research	Single Shot Detector (SSD) with transfer learning	Excellent performance using MobileNetV2 architecture	100% precision, 99% recall	Research Paper
11	Survey on Face Mask	Various Authors	2022	International	Survey of CNN, Transfer	Comprehensive	Survey Paper	Survey Paper

	Detection Using Machine learning			Journal of Research in Engineering and Science	Learning, and YOLO methods	analysis of machine learning approaches		
12	Survey on Face Mask detection using Deep Learning	Various Authors	2021	International Journal of Data Science and Machine Learning Applications	Deep learning model review for face and mask prediction	Highlights importance of object detection in deep learning	Survey Paper	Survey Paper
13	Face Mask Detection using Convolutional Neural Network (CNN) to reduce the spread of Covid-19	Various Authors	2023	Academia.edu Publication	CNN-based approach for COVID-19 prevention	Effective CNN implementation for pandemic control measures	Effective Implementation	Research Paper
14	Face Mask Detection Using Deep Learning	Ponkiran, S., Nikitha, M., Tamilselvan, K., et al.	2021	International Journal of Advanced Research in Engineering Science and Management	Faster R-CNN for worker safety monitoring	Effective detection for road project safety applications	Safety Application Focus	Research Paper
15	Deep Learning Approaches for Face Mask Detection	Various Authors	2024	Eudoxus Press	Comprehensive review of 11 key studies from 2016-2024	Analysis of deep learning evolution in face mask detection	Survey Paper	Survey Paper
16	Face Mask Detection and Recognition Using	Various Authors	2024	Springer Professional	CNN with primary dataset of 65 images	Performance evaluation based on probability	Probability-based Evaluation	Research Paper

	CNN Deep Learning Model					y and accuracy metrics		
17	Comparison of Convolutional Neural Network Architectures for Face Mask Detection	Yahya, A. A., et al.	2021	International Journal of Advanced Computer Science and Applications	AlexNet, GoogleNet, ResNet-18, ResNet-50, ResNet-101	GoogleNet and ResNet achieved superior performance	>95% with fewer images	Comparative Study
18	Masked Face Recognition Using MobileNet V2 with Transfer Learning	Shukla, S., et al.	2023	Computer Systems Science and Engineering	MobileNet V2 with Transfer Learning	Excellent accuracy for masked face recognition	99.82%	Research Paper
19	Deep transfer learning for the recognition of types of face masks	Mar-Cupido, R., et al.	2022	PLOS ONE	NasNetMobile, MobileNetv2, ResNet101v2, ResNet152v2	ResNet models provided best performance for different mask types	ResNet: Best Performance	Research Paper
20	Face mask detection in COVID-19: a strategic review	Jindal, C., et al.	2022	Multimedia Tools and Applications	Strategic review of ML and DL techniques	Comprehensive analysis of face mask detection methods during COVID-19	Strategic Review	Strategic Review

## Summary Statistics

**Total Research Papers:** 20

**Survey Papers:** 5

**Research Papers:** 11

**Project Reports:** 2

**Comparative Studies:** 1

## Key Methodologies Covered

- **CNN Architectures:** ResNet, MobileNet, VGG, InceptionV3, AlexNet, GoogleNet
- **Object Detection:** YOLO (v3, v4, v5), Faster R-CNN, SSD
- **Transfer Learning:** Pre-trained model fine-tuning
- **Ensemble Methods:** Multi-stage detection and classification