



FACE MASK DETECTION USING CONVOLUTIONAL NEURAL NETWORK(CNNs)

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INTRODUCTION & OVERVIEW

- Face mask detection is a computer vision technology that uses AI and machine learning to detect whether individuals are wearing masks/ face mask or not.
- It analyzes images or video streams to identify faces.



IMPORTANCE OF FACEMASK DETECTIONS DURING PANDEMICS

- 1) Prevents transmission
- 2) Compliance monitoring
- 3) Identifies high-risk areas.
- 4) Reduces healthcare burden
- 5) Enhances public safety.
- 6) Informs policy decisions.



DEFINITION OF CNNs



- Clustering is a machine learning technique that groups similar data points into clusters, identifying patterns and structures in data, organising it into meaningful categories, reducing complexity, and discovering hidden relationships.

HOW CNNs WORKS!!!

- STEP 1: Input layer
- STEP 2: Convolutional layer
- STEP 3: Activation function
- STEP 4: Pooling layer.
- STEP 5: Feature extraction
- STEP 6: Flattening
- STEP 7: Fully Connected
- STEP 8: Output layer
- STEP 9 : Optimisation
- STEP 10: Regularization

***HOW
WORKS?***

OVERVIEW OF FACE MASK



- Facemask datasets are collections of images or videos of individuals with or without facemasks, used to train machine learning models for face mask detection, classification and segmentation tasks.

EXAMPLES OF FACEMASK DETECTIONS!!!!

1. Face Mask Detection Dataset (FMDD)
2. Masked Face Recognition Dataset (MFRD)
3. Real World Facemask Dataset (CMFD)
4. Covid-19 Face mask dataset (CFMD)
5. Masked Face Dataset (MFD)
6. Face Mask Segmentation Dataset (FMSSD)

EXAMPLES!

ACCURACY OF FACEMASK DETECTION!

ACCURACY

- The accuracy of facemask detection ranges from 80-99%, with deep learning-based methods achieving 95-99% accuracy, and traditional computer vision methods achieving 80-90% accuracy. In terms of specific metrics, face mask detection accuracy can be evaluated with precision (95-99%) depending on the use

APPLICATIONS AND FUTURE DIRECTIONS!

- ✦ Health care
 1. Track mask-wearing in hospitals.
 2. Help prevent infections.
 3. Future: Integrate with patient records
- ✦ Security and surveillance:
 1. Enhance access control
 2. Identify people not wearing masks
- ✦ Public places:
 1. Monitor mask-wearing in public areas.
 2. Provide real time alerts
 3. Integrate with smart city systems.



POTENTIAL OF FACEMASK DETECTION!



THERE ARE 4 POINTS SUCH AS:

1. Help stop spreading of diseases
2. Make People to follow mask-wearing rules
3. Make public places safer.
4. Provide valuable

SUMMARY!

Face mask detections technology uses AI and computer vision to identify individuals wearing masks in images. It has like high accuracy rate 95-99% , various applications in healthcare, public places and security etc.. Overall, Face mask detection is a valuable data



