

NAVOMESH 2.0 A National Level Hackathon

- **Problem Statement Title-** Development of AI/ML based solution for detection of face-swap based deep fake videos.
- Theme- Smart City
- Team Name (Registered on portal): Coderookies

Team Member Detail

Devarakonda Sai Shree	<u>.</u>
Vaibhav	
KIIT(BBS)	

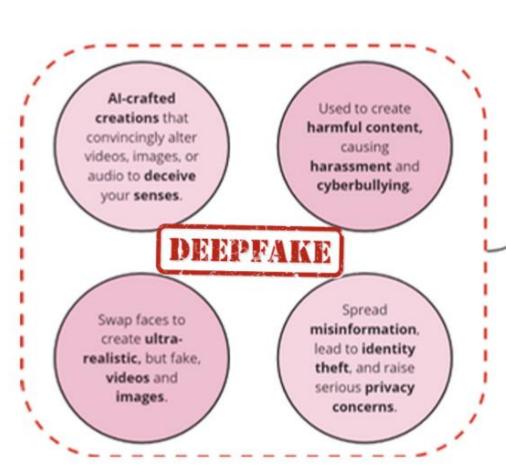
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AI/ML based solution for detection of face-swap based deep fake videos

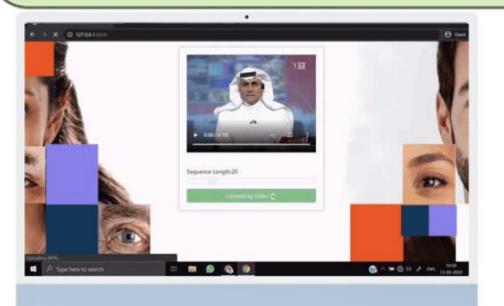




NoCap is a state-of-the-art deepfake detection solution that leverages advanced DeepLearning architecture and Neural Networks to detect and precisely analyze deepfakes.

It identifies even the most subtle manipulations in videos, providing reliable and accurate detection to protect against misinformation and privacy breaches.

NoCap also offers seamless integration with existing security infrastructures, ensuring comprehensive protection for organizations and individuals alike.





TECHNICAL APPROACH



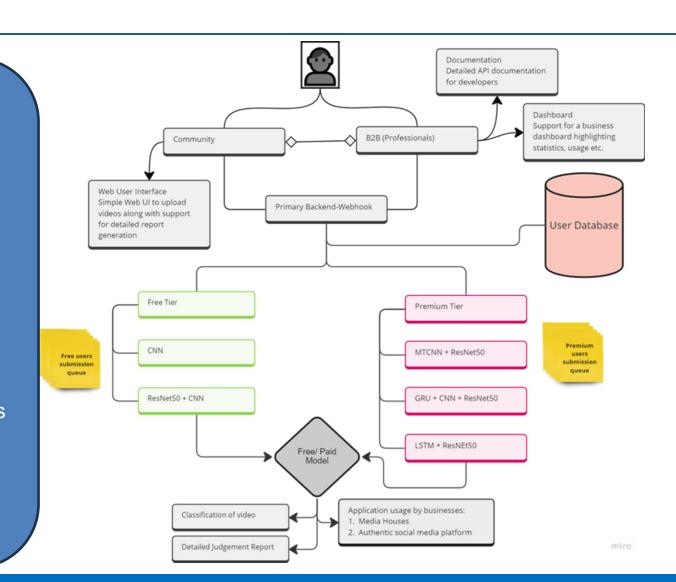
MODEL

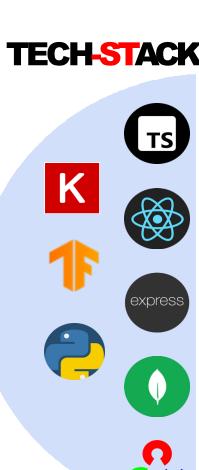
MTCNN's precise face alignment.

ResNet's ability to capture subtle inconsistencies.
Improved accuracy in deepfake detection.

Better generalization across various types of deepfakes.

The model efficiently handles
high-resolution content. LSTM's
frame rate capture enables
precise frame-to- frame
classification, outperforming
current industry models.







FEASIBILITY AND VIABILITY



Feasibility of Current Solution

MTCNN, Resnet and GRU 471Gb Data Set Remote Computational Resources

SWOT Analysis

Market Demand. Regulatory Compliance. Economically Scalable

3 Viablity

S: High detection accuracy.

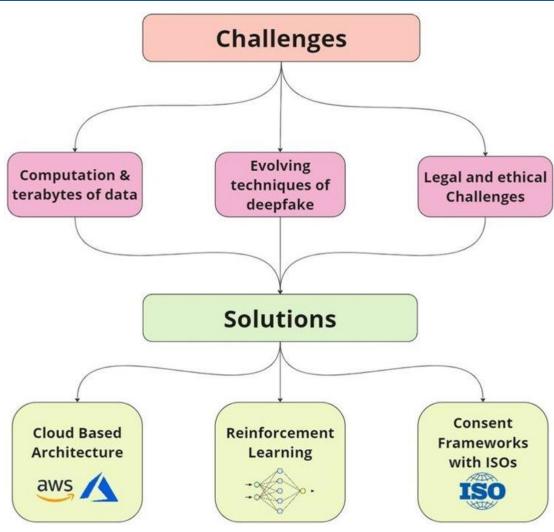
W: Resource-intensive model.

O: Growing market demand.

T: Evolving deepfake tech.

4 USP

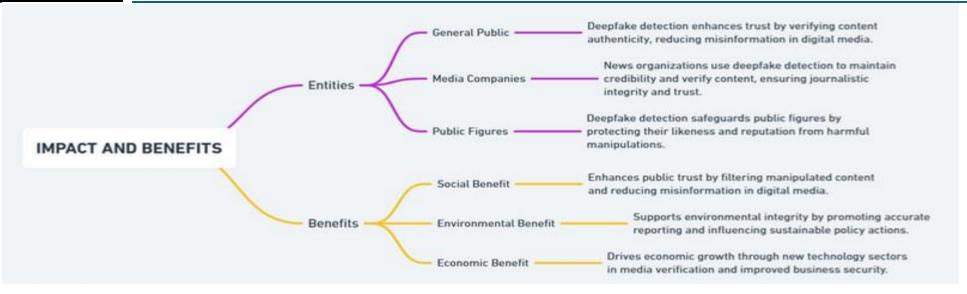
Detailed Judgement Report Seamless Integration across platforms





IMPACT AND BENEFITS





Year 1: B2C (Initial Marketing) Focus: Launch consumer products. Actions: User-friendly apps, subscription

models, digital

marketing.

Year 2: B2B Enterprise Adoption

Focus: Secure enterprise contracts.
Actions: Pilot programs, partnerships, industry events.

Year 3: B2B (Scaling)

Focus: Scale to

new sectors
(finance,
healthcare).
Actions:
Enhance features,
expand globally,
certifications.

Year 4: B2B2C (Partnerships)

Focus: Partner
with tech
companies to
reach
consumers.
Actions: Offer
APIs, integrations
with platforms.

Year 5: Mass Adoption

Focus: Global mass adoption. Actions: Global expansion, optimize pricing, scale support.

Impacts

- Security
- Authenticity
- Transparency

Scalability

- Awarness
- Education

- Future Plans
- Optimization
- Diversification
 Automation
- R&D + Innovation



RESEARCH AND REFERENCES



Deep Fake Detection, Deterrence, and Response: Challenges and Opportunities

Authors: Amin Azmoodeh, Ali Dehghantanha

Model Attribution of Face-swap Deepfake Videos

Authors: Shan Jia, Xin Li, Siwei Lyu

Integrating Audio-Visual Features for Multimodal Deepfake Detection

• Authors: Sneha Muppalla, Shan Jia, Siwei Lyu

FakeAVCeleb: A Novel Audio-Video Multimodal Deepfake Dataset

Authors: Hasam Khalid, Shahroz Tariq, Minha Kim, Simon S. Woo

Celeb-DF: A Large-scale Challenging Dataset for DeepFake Forensics

• Authors: Yuezun Li, Xin Yang, Pu Sun, Honggang Qi, Siwei Lyu

Practical Deepfake Detection: Vulnerabilities in Global Contexts

Authors: Yang A. Chuming, Daniel J. Wu, Ken Hong

