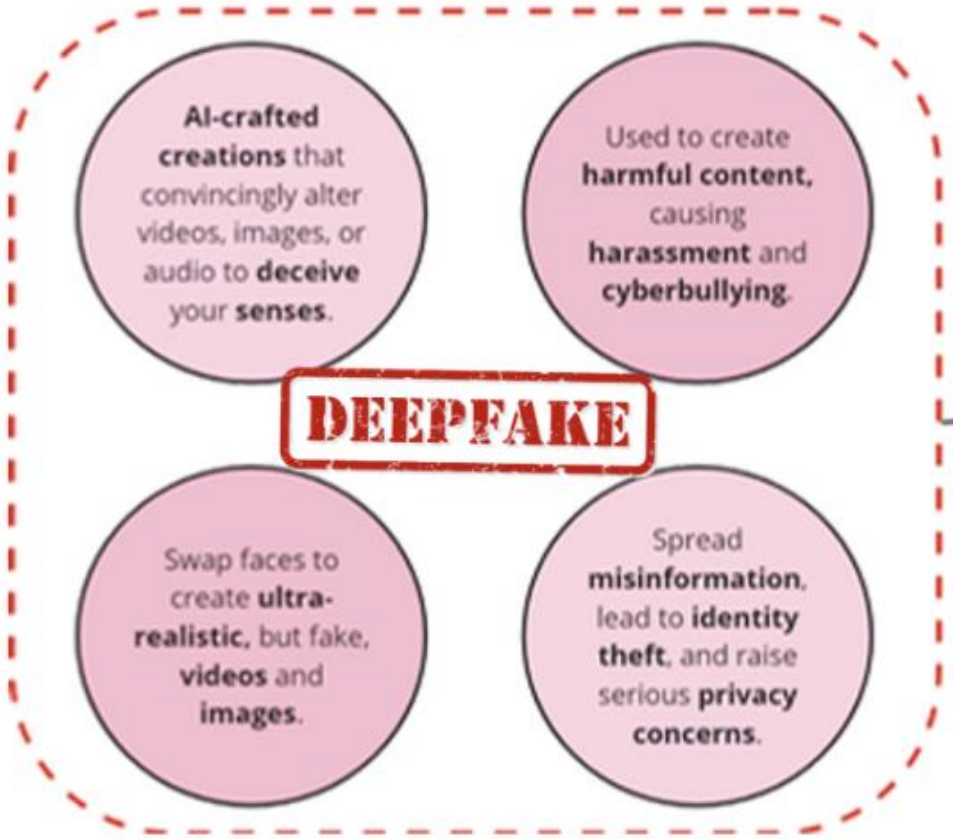
- **Problem Statement Title-** Development of AI/ML based solution for detection of face-swap based deep fake videos.
- **Theme- Smart City**
- **Team Name (Registered on portal) : Coderookies**

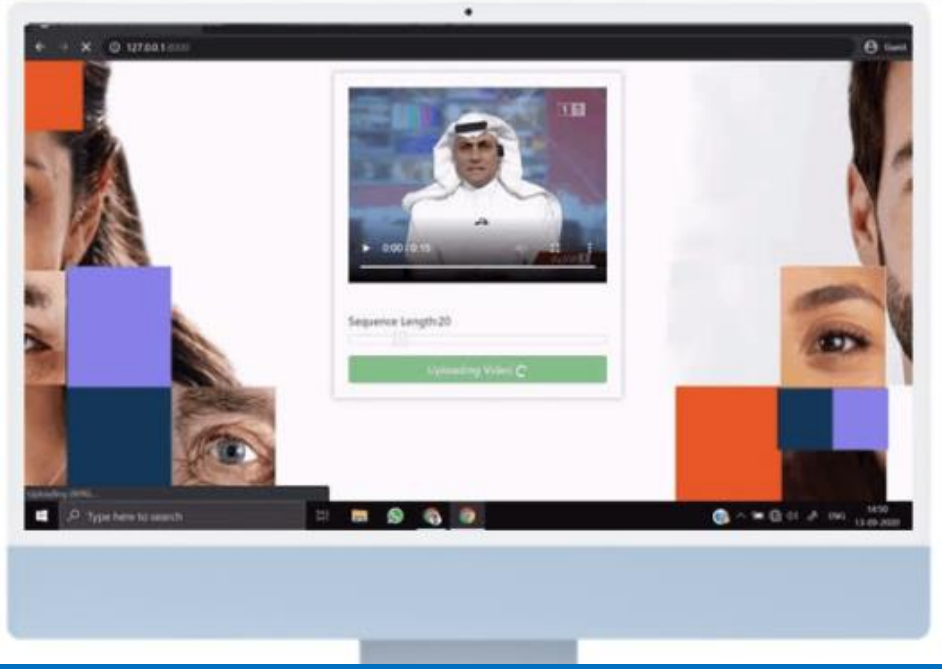
Team Member Detail

Devarakonda Sai Shree Vaibhav KIIT(BBS)	Sanyog Dani SRM(KTR)	Raj Kumar Badwaik BIT(Bhilai)	Shruti Jagpal Katarpawar KIIT(BBS)

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



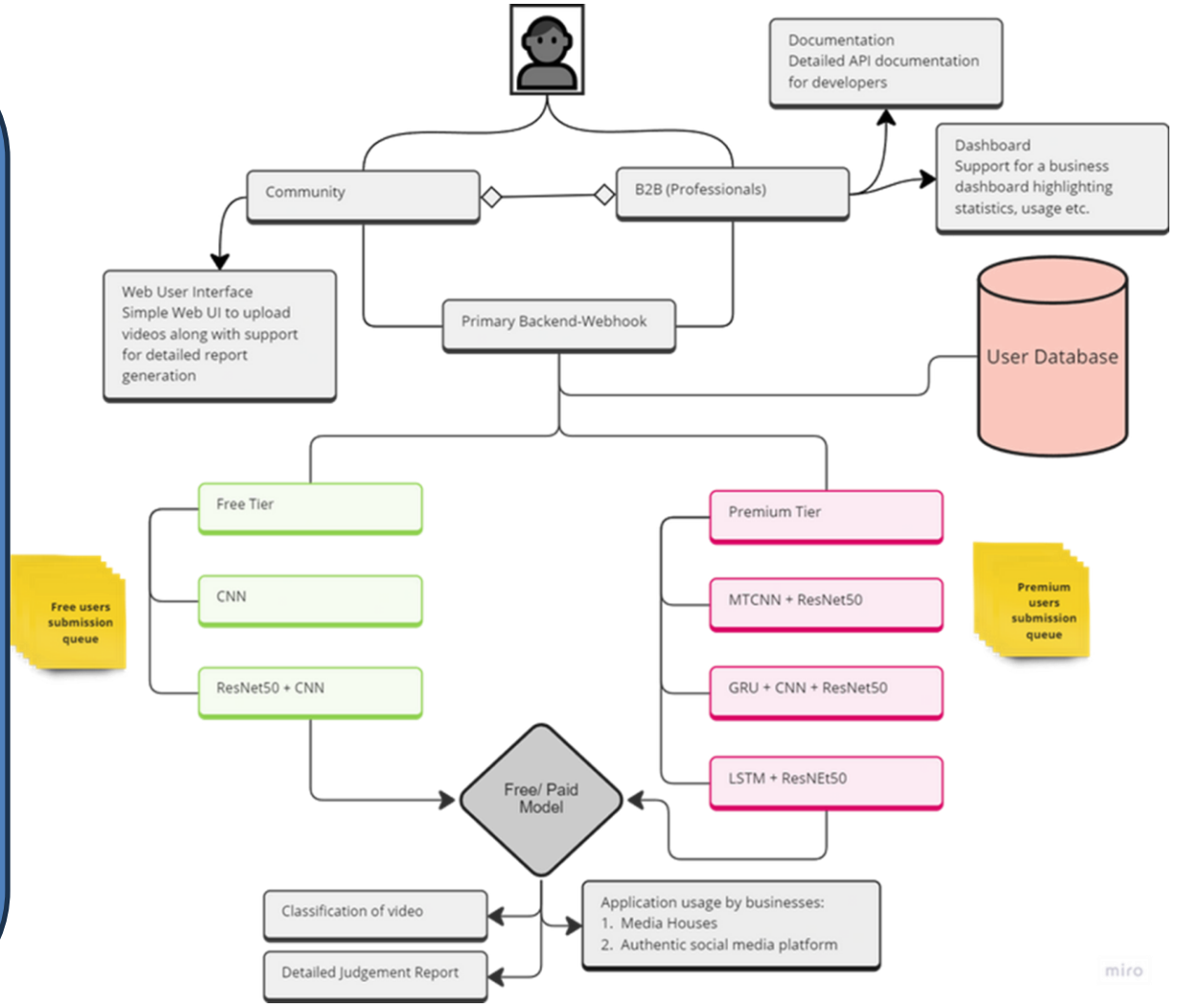
NoCap is a state-of-the-art deepfake detection solution that leverages advanced DeepLearning architecture and Neural Networks to detect and precisely analyze deepfakes.
It identifies even the most subtle manipulations in videos, providing reliable and accurate detection to protect against misinformation and privacy breaches.
NoCap also offers seamless integration with existing security infrastructures, ensuring comprehensive protection for organizations and individuals alike.



TECHNICAL APPROACH

MODEL

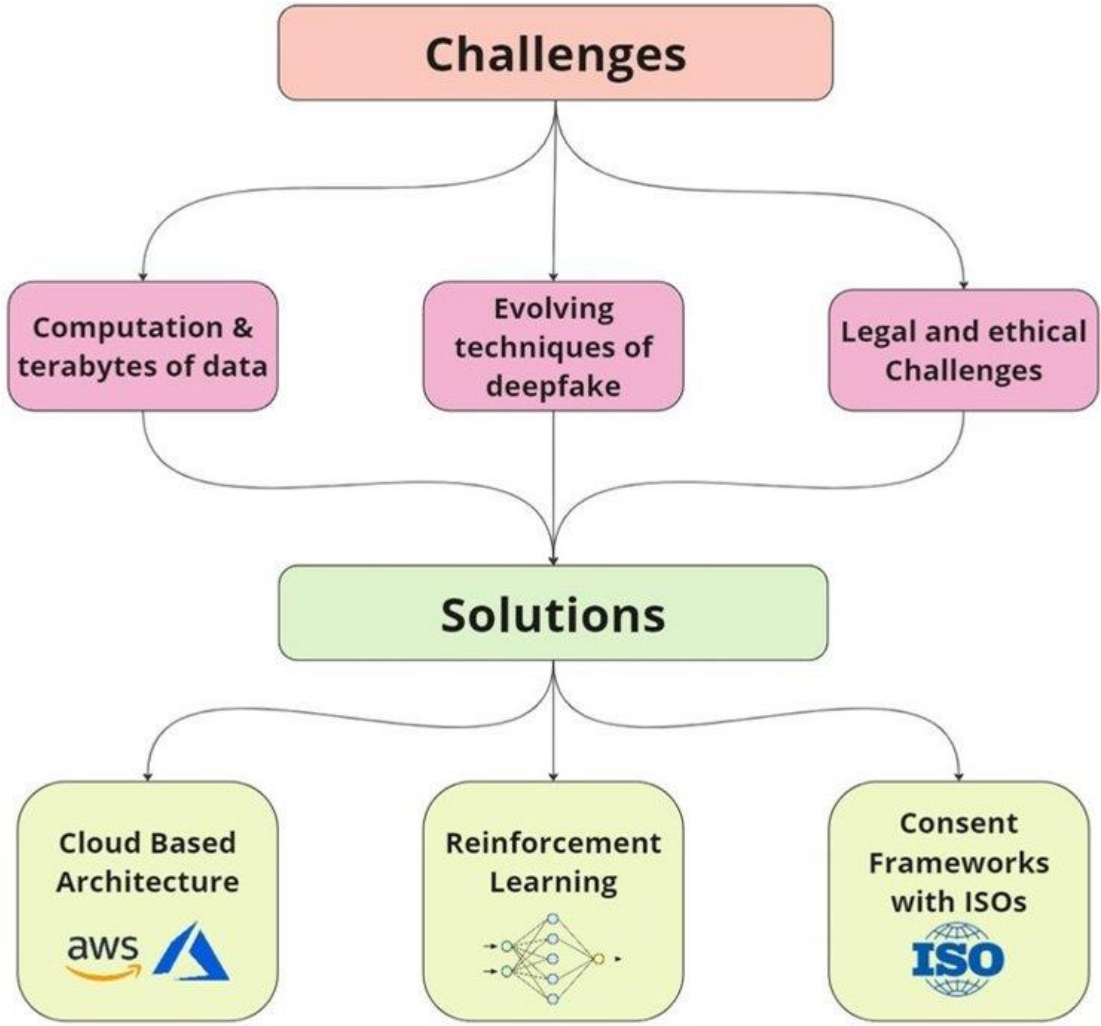
MTCNN's **precise face alignment**.
ResNet's ability to **capture subtle inconsistencies**.
Improved accuracy in deepfake detection.
Better generalization across various types of deepfakes.
The model efficiently handles **high-resolution content**. LSTM's frame rate capture enables **precise frame-to- frame classification**, outperforming current industry models.



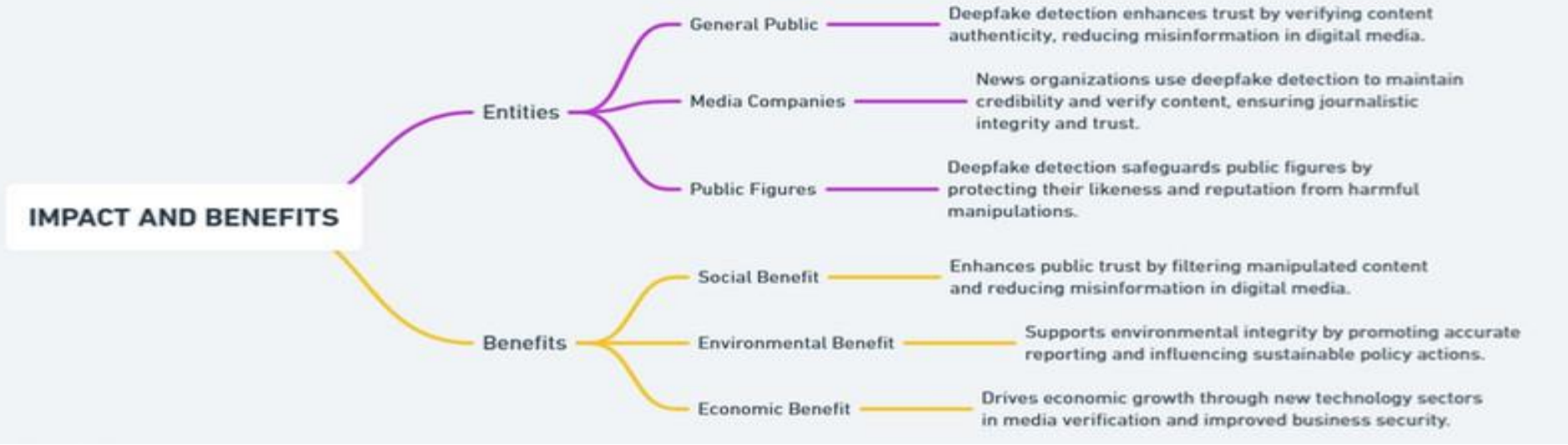
TECH-STACK

FEASIBILITY AND VIABILITY

1	Feasibility of Current Solution	MTCNN, Resnet and GRU 471Gb Data Set Remote Computational Resources
2	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



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