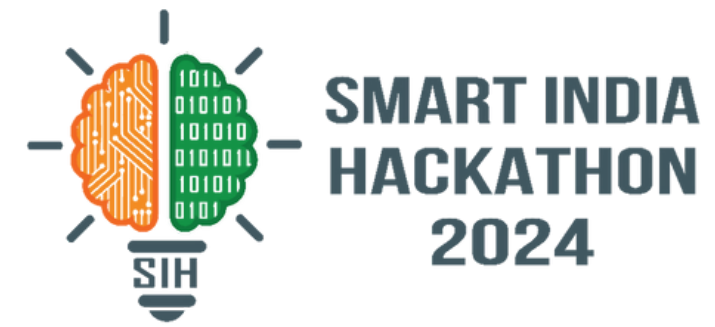




SMART INDIA HACKATHON 2024



- **Problem Statement ID** –1683
- **Problem Statement Title-** Development of AI/ML based solution for detection of face-swap based deep fake videos.
- **Theme-** Miscellaneous
- **PS Category-** Software
- **Team ID-**
- **Team Name-** Deepfake Hunters





deepfake.
HUNTERS

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



SMART INDIA
HACKATHON
2024

AI-crafted
creations that
convincingly alter
videos, images, or
audio to **deceive**
your senses.

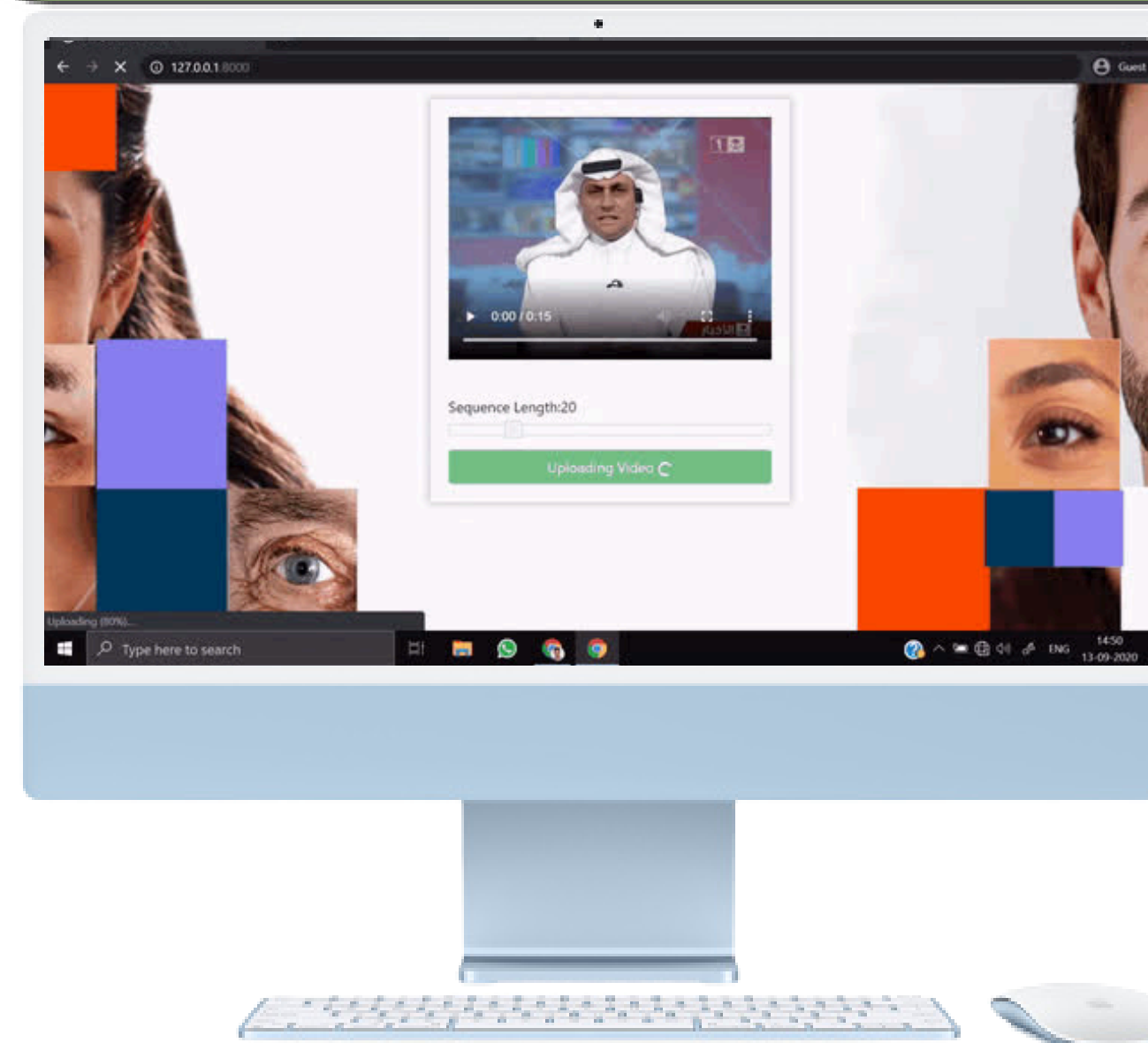
Used to create
harmful content,
causing
harassment and
cyberbullying.

DEEPAKE

Swap faces to
create **ultra-**
realistic, but fake,
videos and
images.

Spread
misinformation,
lead to **identity**
theft, and raise
serious **privacy**
concerns.

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.



PRESENTING - NoCap

TECHNICAL APPROACH

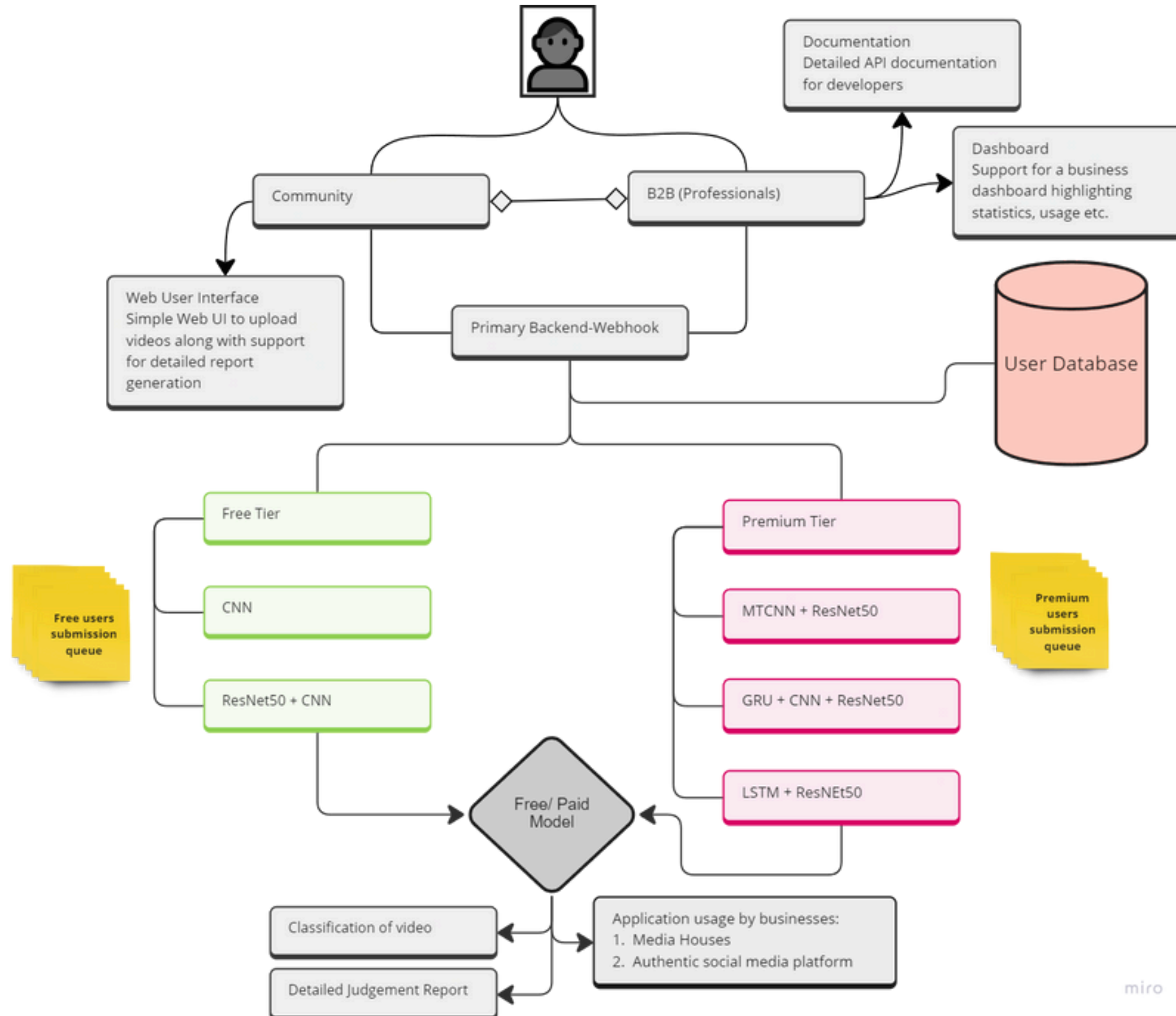
TECH-STACK

MODEL

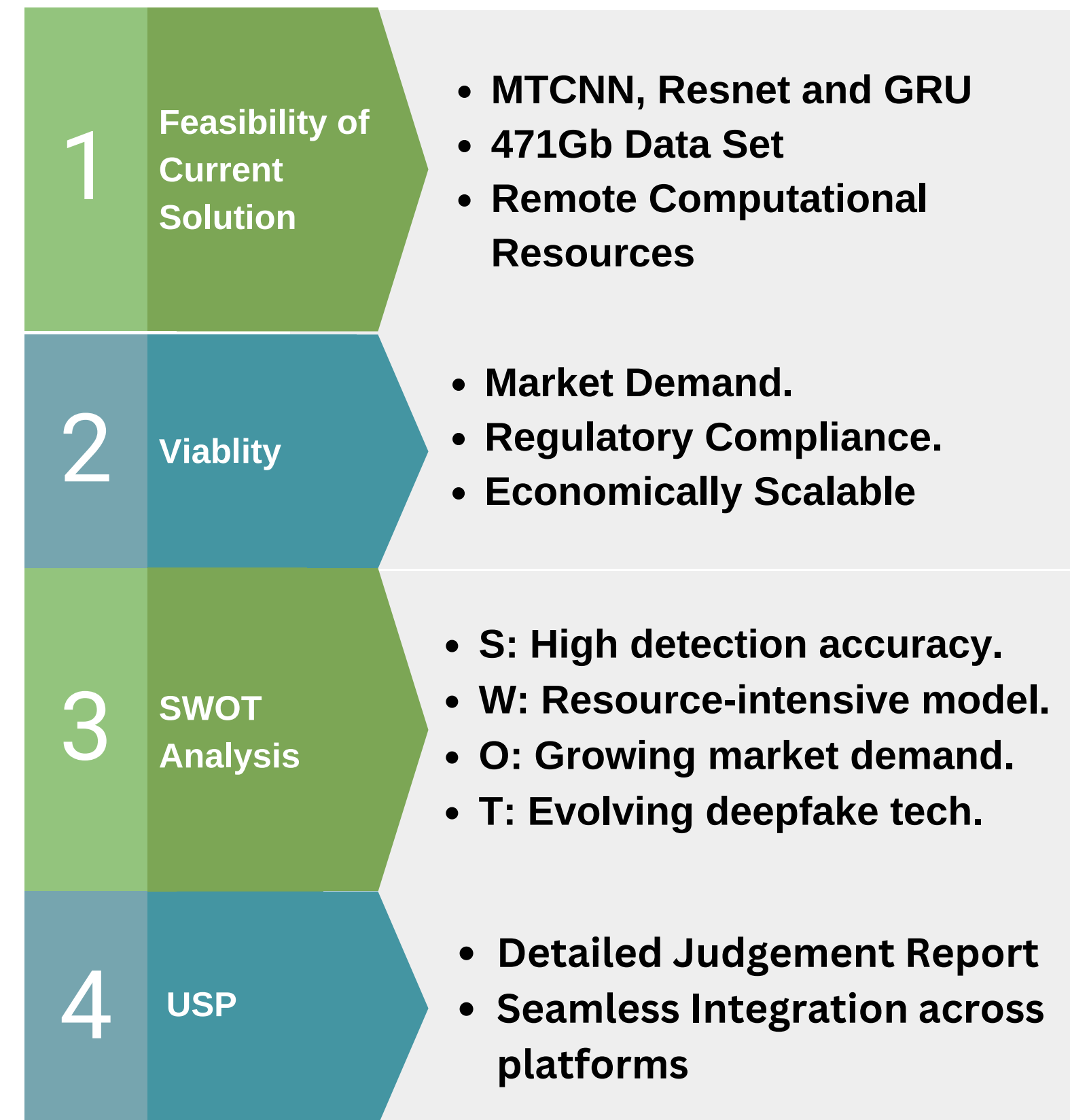
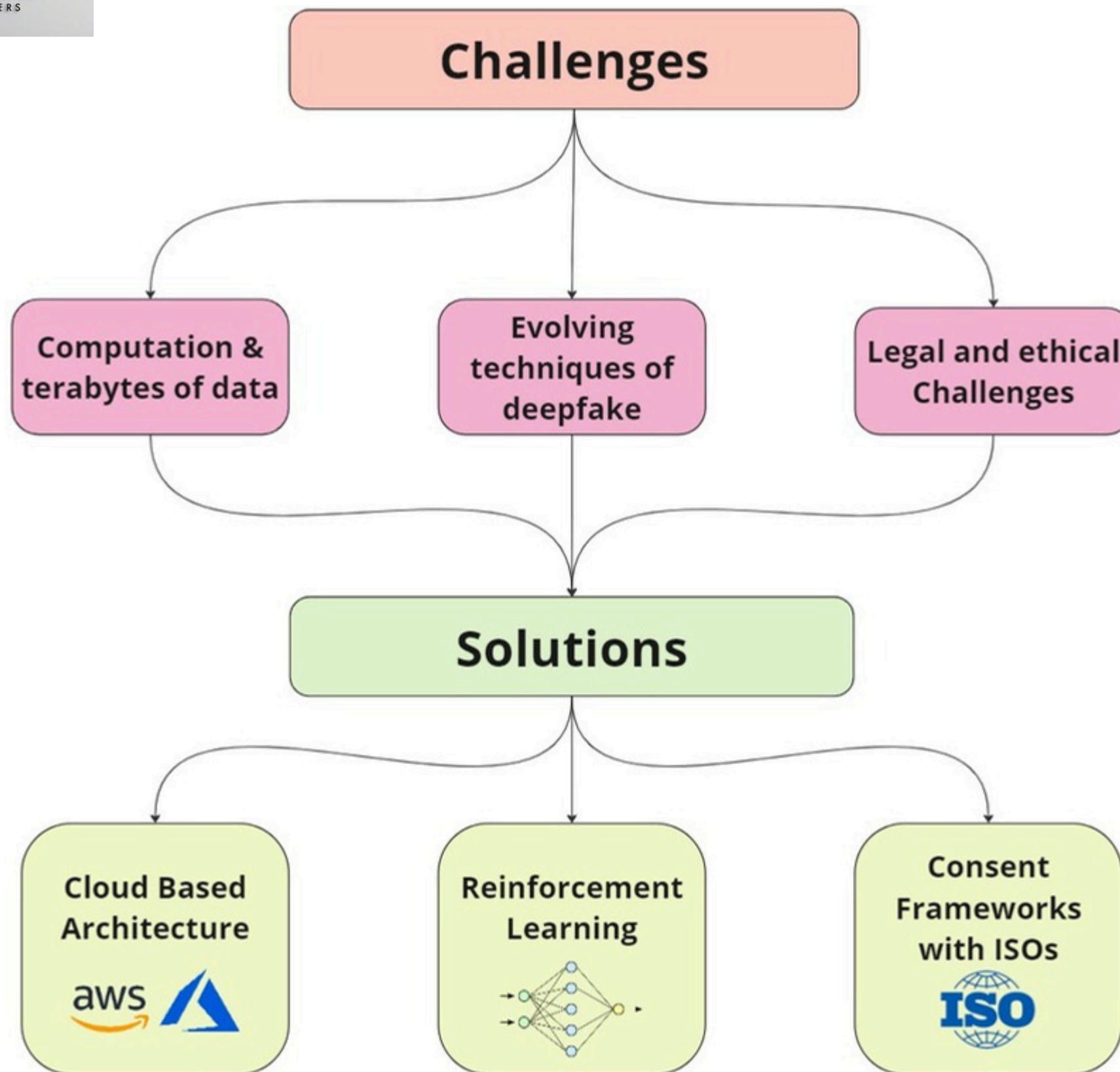
- MTCNN's **precise face alignment**.
- ResNet's ability to **capture subtle inconsistencies**.
- **Improved accuracy** in deepfake detection.
- **Better generalization** across various types of deepfakes.
- The model efficiently handles **high-resolution content**.
- LSTM's frame rate capture enables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

PROJECT LINK

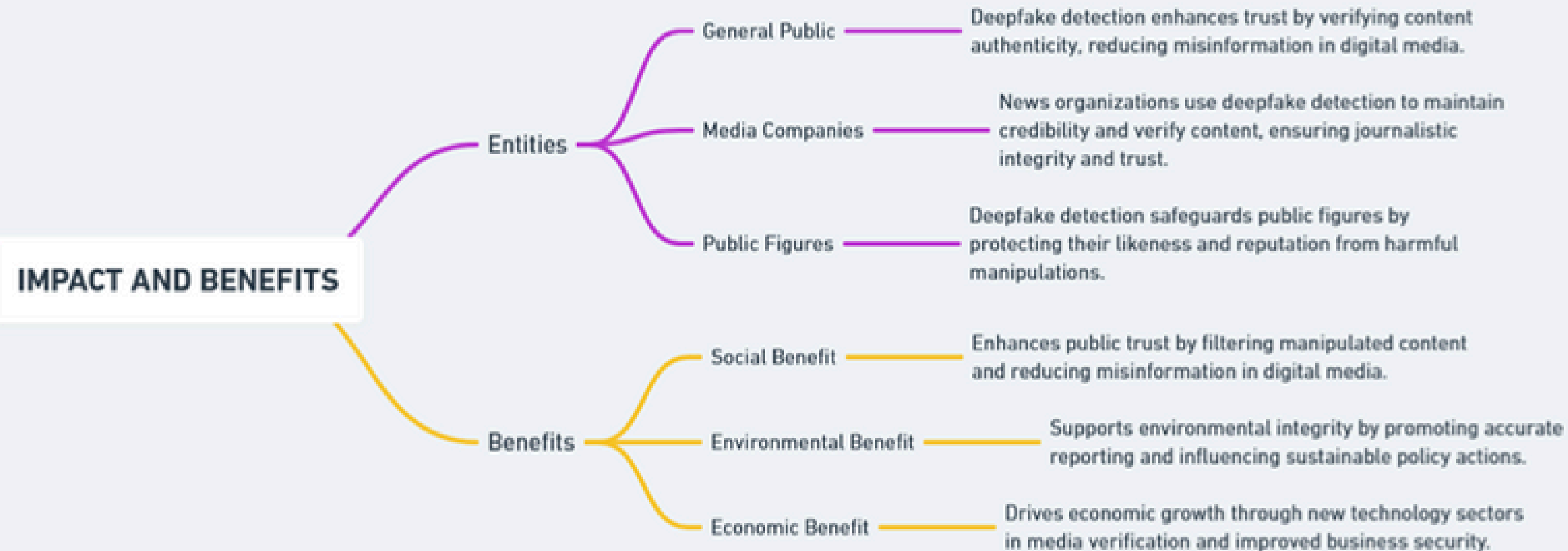
github.com



FEASIBILITY AND VIABILITY



IMPACTS AND BENEFITS



Impacts

- Security
- Authenticity
- Transparency

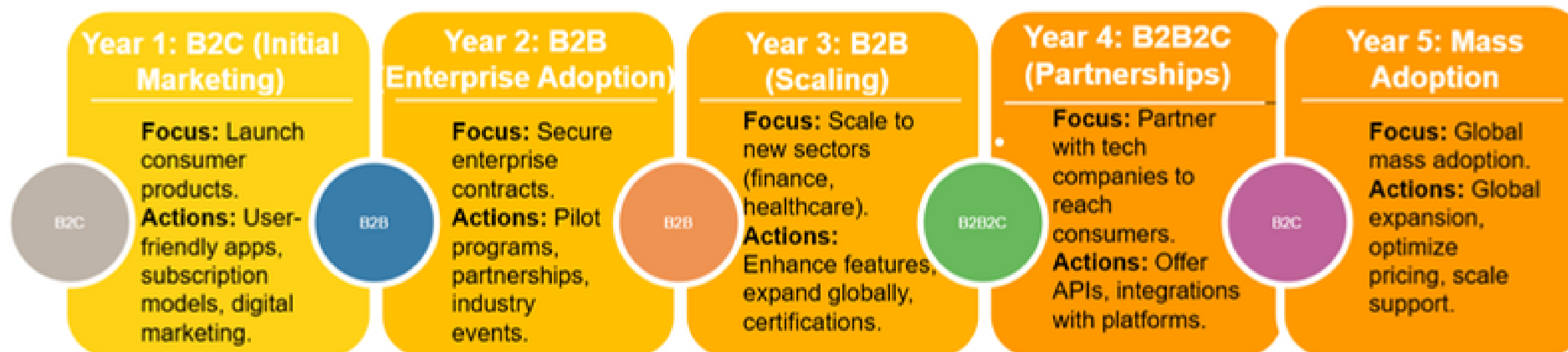
Scalability

- Awareness
- Education

Future Plans

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

5 YEAR PLAN





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](#)

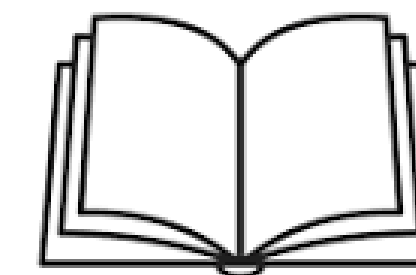
- Authors: Hasam Khalid, Shahroz Tariq, Minha Kim, Simon S. Woo

[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





Team Member Details

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Category (Industry) Expertise **(Computer Networks, COS)** Domain Experience **(22 years)**