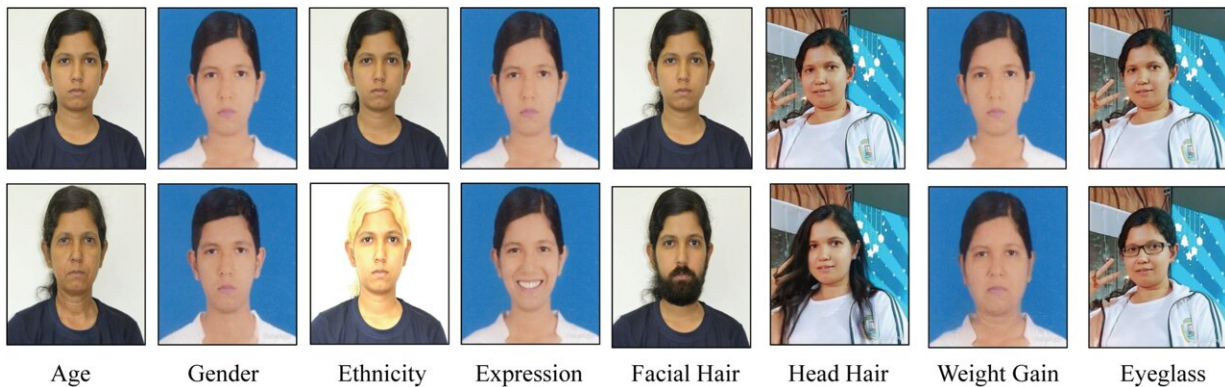


Proactively enhancing detection methods and improving deepfake datasets

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Illustrative instances of distinct face manipulations: the first row features original samples while the second row presents manipulated counterparts created using mobile apps like FaceApp. Credit: *Forensic Sciences* (2024). DOI: 10.3390/forensicsci4030021

A new study from SUNY Polytechnic Institute provides a detailed overview of deepfake datasets and identifies key challenges, offering valuable insights for researchers, engineers, and practitioners. It emphasizes the importance of developing proactive detection methods and improving existing datasets to combat deepfake threats effectively.

This work is crucial for maintaining digital information integrity and aiding forensic investigations against sophisticated [deepfake](#) threats. The research is [published](#) in the journal *Forensic Sciences*.

The study was led by SUNY Polytechnic Institute Assistant Professor of Network and Computer Security: Cybersecurity Dr. Zahid Akhtar and graduate students Thanvi Lahari Pendyala, and Virinchi Sai Athmakuri.

Their paper categorizes deepfakes into identity swap, face reenactment, attribute manipulation, and entire face synthesis, emphasizing the need for improved datasets and robust detection methods.

Existing frameworks struggle with [generalization](#) and are prone to adversarial attacks, necessitating advancements in detection technologies. The authors suggest future research should focus on creating comprehensive datasets and enhancing detection methods' accuracy, robustness, and real-time capabilities.

More information: Zahid Akhtar et al, Video and Audio Deepfake Datasets and Open Issues in Deepfake Technology: Being Ahead of the Curve, *Forensic Sciences* (2024). [DOI: 10.3390/forensicsci4030021](https://doi.org/10.3390/forensicsci4030021)

Provided by SUNY Polytechnic Institute

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