

Using AI to detect fake smiles in prison interviews to help reveal potential deception

The prison system strongly relies on trained human officers when they conduct interviews with prisoners to collect information regarding the inmate behaviour and crime that was committed. In order to get a better understanding within prison interviews, support could be provided to prison officers around identifying deceptive behaviour which could indicate significant potential risks.

Aim

This proposal is created to develop code which involves an Artificial Intelligence library which would be used to detect fake smiles when prisoners are having their interviews at the station. This would support the expertise of trained officers without replacing their judgement but instead provide assistance in the form of additional technology.

Objectives

- Develop a code using a software called Visual Studios which would be able to analyse prisoner's faces during interview to detect fake smiles in real-time as well as after
- Design a functional user-friendly interface to support prison officers in effectively using the AI during and after interviews
- The recording system must be able to integrate into existing computers
- Ensure that the software is in compliance with the UK Gov laws meeting the standards of privacy for HMP security prison

Methodology:

- Development: Using code with inbuilt algorithms of machine learning in order to train the Visual Studio's code to run a dataset found online which would contain multiple individuals focusing on real and fake smiles
- Training And testing: The code would be put into testing to determine the accuracy level and also test the usability by running simulated tests within a controlled environment such as a classroom school setting.
- Ethical Compliance: The main concern is that the purpose of the technology is ethically acceptable in its usage. Working with a prison population raises issues around consent and it is important the privacy and confidentiality of prisoners is complied with.

Key Considerations

- **User-Friendly Interface:** The interface should be simple and easy to use
- **Compatibility:** Ensure that the system is compatible with the computers in prisons
- **Real-Time Analysis:** Explore different ranges of systems that are compatible with real time system
- **Training testing:** Testing to be conducted on people who are unfamiliar with computer systems and AI.
- **Adaptability:** AI tool should be fully adaptable to different interview scenarios and personalities. The image data set used must be tested and trained to avoid bias.
- **Privacy and Confidentiality:** Ensure that the use of this tool complies with privacy regulations and maintains confidentiality.

Conclusion:

Facial recognition and

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Delete and take ideas from

Integrating an AI tool for deception detection into existing interview processes within a prison setting involves several key considerations:

1. **User-Friendly Interface:** Design the AI tool to have a user-friendly interface that prison authorities can easily navigate. This might involve a simple dashboard or software that's intuitive and doesn't require extensive technical expertise to operate.
2. **Integration with Recording Systems:** Ensure compatibility with existing recording systems used during inmate interviews. The AI tool should seamlessly integrate with these systems to analyze facial expressions captured in the recorded interviews.

3. **Real-Time Analysis:** If feasible, consider whether the AI tool can provide real-time analysis during interviews. This could involve using live video feed analysis or quickly processing recorded interviews to provide immediate feedback to the interviewing officers.
4. **Training and Familiarization:** Conduct training sessions for prison officers to familiarize them with the AI tool. Training should cover how to use the tool effectively, interpret its results, and integrate its insights into their interview processes without solely relying on AI outcomes.
5. **Customization and Adaptability:** Make the AI tool adaptable to different interview scenarios and personalities. Different inmates might exhibit varied behavior, so the tool should be able to adjust and analyze a wide range of facial expressions and behaviors accurately.
6. **Privacy and Confidentiality:** Ensure that the use of this tool complies with privacy regulations and maintains confidentiality. Facial recognition and analysis involve personal data, and its use should be in line with legal and ethical guidelines.
7. **Feedback Loop and Improvement:** Establish a mechanism for feedback from prison authorities regarding the tool's effectiveness. This feedback loop can aid in continuous improvement and updates to the AI model.
8. **Pilot Testing and Evaluation:** Conduct pilot tests within the prison setting to evaluate the effectiveness, usability, and acceptance of the AI tool by the officers. This step will provide valuable insights into any necessary adjustments or improvements before full-scale implementation.

By addressing these integration aspects, the AI tool can become a supportive aid for prison authorities during interviews, offering insights into potential deceptive behavior while augmenting, not replacing, the judgment and expertise of the officers.

Real time vs after interview processing

REASONS FOR USE

Prison interviews serve multiple critical purposes within the correctional system, and the ability to detect fake smiles could significantly impact these processes:

1. **Security and Safety:** Detecting deception in inmate interactions is crucial for maintaining security within a prison. Fake smiles could be a sign of manipulation or an attempt to conceal intentions that could pose risks to the safety of both inmates and staff. Identifying deceptive behavior early can prevent potential security breaches or conflicts.
2. **Investigative Tool:** Interviews are essential for gathering information related to incidents, crimes, or potential threats within the prison. The ability to detect fake smiles can aid in identifying inconsistencies or potential lies during these interviews, allowing for more effective investigation and gathering of accurate information.
3. **Behavioral Assessment:** Understanding an inmate's true emotional state and intentions is crucial for assessing their behavior and potential risks. Fake smiles might indicate underlying issues such as aggression, defiance, or attempts to manipulate the system. Detecting these can assist in designing appropriate rehabilitation or intervention programs.
4. **Evaluation of Rehabilitation Progress:** Inmates often undergo interviews as part of their rehabilitation programs. The ability to detect genuine emotions can help assess the sincerity and progress of an inmate's rehabilitation efforts, aiding in determining the appropriate support or interventions needed for successful reintegration into society.
5. **Enhanced Decision-Making:** Prison authorities often make decisions based on the information gathered during interviews. Detecting fake smiles can provide additional insights, assisting in making more informed decisions regarding parole, privileges, or disciplinary actions.
6. **Staff Safety:** Understanding the emotional state of inmates during interviews can also contribute to the safety of prison staff. Recognizing signs of potential aggression or manipulation through fake smiles can allow officers to take precautionary measures during interactions.

By detecting fake smiles and potentially deceptive behavior during interviews, the correctional system can better ensure the safety of all involved, make more informed decisions, and support the rehabilitation and reintegration efforts of inmates. This technology can serve as an additional tool to augment the expertise of prison authorities in these critical interview processes.

Limitations

Recognizing the limitations of using smile detection for deception in a prison setting is crucial for a balanced understanding of the technology's scope and effectiveness:

1. **Cultural and Individual Variations:** Facial expressions, including smiles, can vary significantly based on culture, personality, and individual differences. What

might be perceived as a fake smile in one context could be a genuine expression in another. The AI might struggle with these variations, leading to potential misinterpretations.

2. **Contextual Understanding:** Detecting deception solely based on facial expressions, especially smiles, lacks the ability to consider the broader context of an interaction. Genuine smiles can sometimes occur in stressful situations or as a coping mechanism, while fake smiles might not always indicate deception.
3. **Training Data Bias:** AI models are trained on datasets, and the quality and diversity of these datasets significantly impact their accuracy. If the training data is biased or limited in representing various demographics, the AI might not generalize well to diverse inmate populations, leading to potential inaccuracies.
4. **Emotional Complexity:** Human emotions are complex and multifaceted. Focusing solely on smiles oversimplifies the intricacies of emotional expression. Deceptive behavior might involve various other cues beyond facial expressions that an AI based on smile detection alone might miss.
5. **Ethical and Privacy Concerns:** Facial recognition and emotion analysis raise significant ethical concerns regarding privacy, consent, and potential misuse of personal data. Implementing such technology in a prison setting requires stringent protocols to protect the rights of inmates and ensure ethical use.
6. **Overreliance on Technology:** Relying solely on AI for deception detection during interviews can lead to overreliance and potentially undermine the expertise and intuition of trained human officers. It should be used as a supportive tool rather than a definitive judge of truthfulness.
7. **False Positives and Negatives:** Like any technology, AI-based smile detection can produce false positives (identifying genuine smiles as fake) or false negatives (missing actual fake smiles). These errors can impact the accuracy and reliability of the system's assessments.

Recognizing these limitations is crucial for implementing this technology responsibly. It's essential to use AI as an aid, not a replacement, for human judgment, and to continually refine and improve the system while acknowledging its constraints. Regular evaluations, feedback mechanisms, and transparency about the technology's capabilities and limitations are essential in this regard.

The goal is to support the expertise and intuition of trained human officers not replace it!