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# PROJECT TITLE



## FACE MASK DETECTION USING CNN



# AGENDA

1. Problem Statement
2. Project Overview
3. End Users
4. Our Solution and Proposition
5. Key Features
6. Modelling Approach
7. Results and Evaluation
8. Conclusion



# PROBLEM STATEMENT

Enhanced security measures have gained importance in recent years, especially in public areas and crowded events. A major concern is the potential danger of individuals carrying mace or pepper spray, which could be used for attacks or to incite panic in busy places. Traditional security setups may not be able to detect hidden mace effectively, creating a vulnerability in public safety protocols.



# PROJECT OVERVIEW

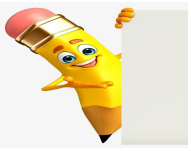
- The initiative aims to create a dependable and powerful system for detecting mace or pepper spray in public areas. By leveraging modern technologies like computer vision and machine learning, the goal is to develop a solution that can effectively identify the presence of mace on individuals entering monitored spaces. Implementing this system will strengthen security measures, allow for quick responses to potential threats, and help maintain the safety of people in public environments.



## **. WHO ARE THE END USERS?**

**The primary end users of this technology include:**

- Security personnel at airports, train stations, and other transportation hubs**
- Event organizers for concerts, sports events, and festivals**
- Educational institutions such as schools and universities**
- Government agencies responsible for public safety and security**



# YOUR SOLUTION AND ITS VALUE PROPOSITION



We are developing a mace detection system that uses computer vision algorithms to analyze live video feeds from surveillance cameras. By training machine learning models on datasets containing images of individuals carrying mace, the system will learn to recognize specific features and patterns associated with these devices. This system will be seamlessly integrated with existing security infrastructures, providing immediate monitoring and alerting capabilities.



# THE WOW IN YOUR SOLUTION

- Real-time detection of mace or pepper spray on individuals within monitored areas
- Integration with existing surveillance systems for seamless deployment
- Customizable alert mechanisms for security personnel
- Scalability to accommodate various settings and crowd sizes
- Continuous learning and improvement through feedback mechanisms





# MODELLING

Our modelling approach involves several key steps:

1. Data collection: Gathering a diverse dataset of images containing individuals carrying mace or pepper spray.
2. Preprocessing: Cleaning and augmenting the data to improve model performance and generalization.
3. Model selection: Experimenting with various computer vision architectures, such as convolutional neural networks (CNNs), to identify the most suitable approach for mace detection.
4. Training and validation: Training the chosen model on the prepared dataset and validating its performance using metrics such as accuracy, precision, and recall.
5. Deployment: Integrating the trained model into the face mace detection system and conducting real-world testing to ensure reliability and effectiveness.

# OUTPUT



# RESULTS

Upon completion of the project, we will evaluate the performance of our face mace detection system based on several criteria:

1. Detection accuracy: Measuring the system's ability to correctly identify individuals carrying mace or pepper spray.
2. False positive rate: Assessing the frequency of erroneous alerts triggered by non-threatening objects or activities.
3. Response time: Evaluating the speed at which security personnel can react to detected threats and initiate appropriate measures.
4. User feedback: Soliciting feedback from end users to gauge the system's usability, reliability, and overall effectiveness.

[Demo Link](#)

# CONCLUSION

In conclusion, the development of a mace detection system marks a significant advancement in enhancing public safety and security measures. By leveraging cutting-edge technology and machine learning algorithms, we improve our capacity to efficiently and accurately identify potential threats, reducing risks in public spaces.

Our solution takes a proactive approach to security, enabling security teams to swiftly respond to new threats and protect the well-being of people in various environments.