
SAFETY,SECURITY
AND SURVEILLANCE

PROBLEM STATEMENT

Title: Challenges in Identifying Distress in Public Spaces.

- Identifying whether an individual feels uncomfortable or distressed inside large crowds is extremely difficult.
- Traditional surveillance systems lack the capability to analyse and understand human emotions and provides no additional features except monitoring.
- This limitation often results in slow responses to emergencies, which can have severe consequences.
- Hence, there is a pressing need for proactive measures to ensure the safety and well-being of individuals in busy environments such as airports, concerts, and other public gatherings.

MISSION STATEMENT

- Our mission is to use advanced technology to **monitor and understand people's emotions in real-time**. We plan to create a top-notch system to **spot people in distress quickly** and help those who need it immediately by **examining their facial patters to recognize their emotions.** Our mission is **to make public places safer** and **more responsive to emergencies** and try to save people from unpleasant consequences but making help reach them swiftly.

- Additionally, our idea would also serve as a **public emotion recognition system** which can also detect how public feels inside a show, a gathering, a concert etc., meaning, it would be able to track public emotions which can serve as feedback to the show organizers and give them information about the satisfaction or the boredom of public.

SOLUTION

- Our solution, uses advanced technology to analyse facial expressions and emotions. By implementing **Emotion Detection** through Deep Learning, our software will perform real-time monitoring of people's faces through CCTV surveillance cameras or recording cameras, and can identify how each and every person feels, standing at that place.

- It can recognize emotions like sadness, happiness, or distress, fear, anger, anxiety, suffocative etc. When the system detects negative emotions (like distress/discomfort), it can immediately alert the security personnels, enabling them to provide swift assistance to that person.

- **Example Case:** Suppose there is a concert occurring somewhere and there is a lot of public influx. Our software would be installed in the CCTV cameras monitoring the whole area, such that it can have a clear view at the public. The CCTV will capture the ongoing normally whereas our software will keep monitoring each and every face of everyone present there, and will try predicting his/her emotions by analysing the facial expression. If need arises that someone feels distressed, an alert will be generated to escort help to that specific person in the crowd.

BUSINESS CONCEPT

- Our business concept revolves around providing a state-of-the-art emotion detection system to enhance security and safety in public spaces. Our pricing strategy is based on the value we provide in terms of enhanced security, rapid response to distress, and improved public confidence. We plan to generate revenue through a subscription-based model, offering different tiers of service based on the size and needs of the client:

TARGET CUSTOMER/BENEFICIARIES

- **Target Customers:**

- **Airports:** Enhancing security and passenger safety.
- **Concerts and Stadiums:** Monitoring large crowds for potential distress.
- **Shopping malls:** Ensuring a safe shopping environment.
- **Public Transportation Hubs:** Improving safety in crowded places like train stations and bus terminals.
- **Government and Law Enforcement:** Assisting in public safety and crowd management.

IMPLEMENTATION

- The following idea has been represented using python somewhat as a blueprint, as demonstrated.
- We used concept of Deep Learning to recognize facial patterns of people through their images.
- Modules used with their uses have been listed below:
  - OpenCV to read and extract data from an image,
  - Tensorflow and Keras which provide the basic framework required for any deep learning model,
  - Matplotlib to visualize some images and ImageDataGenerator to resize and rescale images.
  - Our model will be able to predict the emotions (Angry, Sad, Distressed, Fear, Disgusted etc.) from the training performed with extensive number of images belonging to each emotion category.

PRICING

- • **Basic Plan:** Suitable for smaller venues with minimal requirements. Priced at $1,000 per month.
- • **Standard Plan:** For medium-sized venues needing more comprehensive coverage. Priced at $5,000 per month.
- • **Premium Plan:** For large venues requiring extensive coverage and advanced features. Priced at $10,000 per month.
- • **Custom Plan:** Tailored solutions for clients with specific needs. Pricing is negotiable based on requirements.

UNIQUENESS OF THE PRODUCT

- Our innovative approach can offer several key benefits:

- **Quick Help** ensures fast detection and response to individuals in distress.
- **Better Surveillance** enhances monitoring capabilities beyond traditional cameras.
- **Public Confidence** is bolstered by increased trust in public safety measures.
- **Emotion feedback** – Show organizers can visualize how public feels attending their shows, are they being entertained, are they feeling bored etc.

THANK YOU!