

# PetroChoice Face Recognition System:

## PROGRESS REPORT

**Date:** April 10, 2025

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**Role:** AI Engineer

### 1. Project Overview

#### 1.1 Main Project: Safety System for Drilling Building

PetroChoice is building a face recognition system to keep workers safe in a drilling building. The system uses four cameras to:

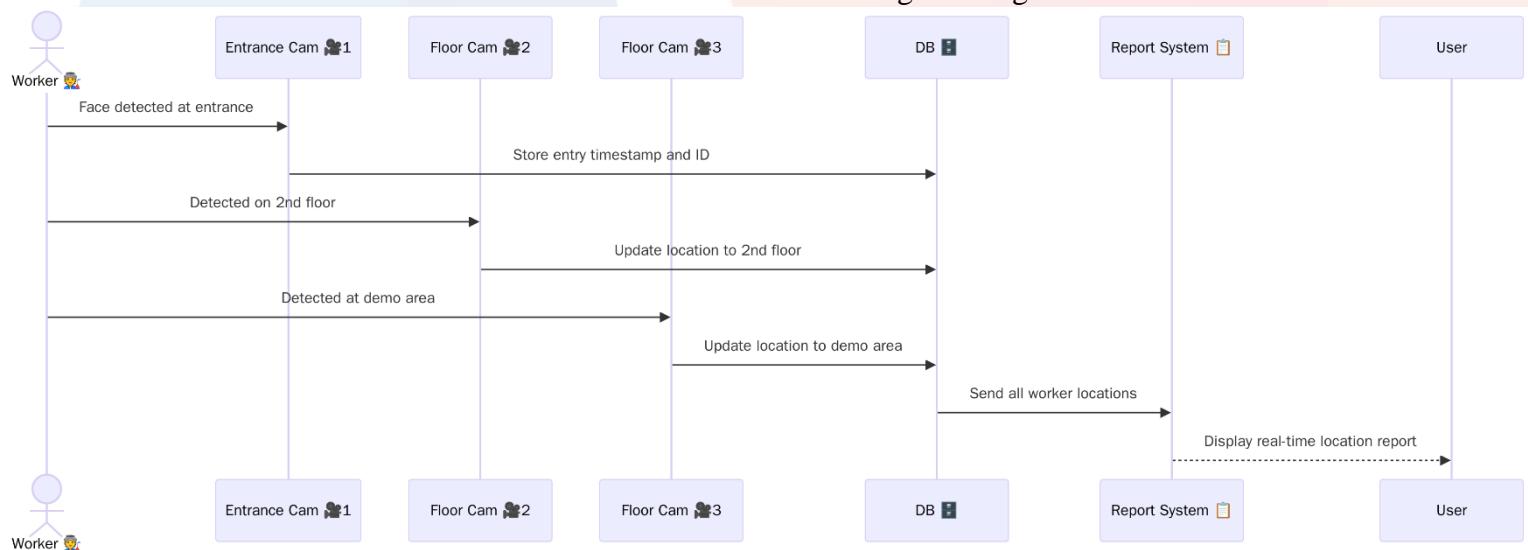
- Identify workers as they enter the building.
- Track where they go (like the second floor).
- Show a live report of everyone's location.

This will help us know where workers are at all times, making the building safer and easier to manage.

#### 1.2 Demo Project: Testing the Idea

Right now, we're working on a smaller demo with three cameras in our office. The demo helps us:

- Collect face pictures from our team.
- Teach the system to recognize people.
- Test if it works well before we use it in the drilling building.



## 2. What We've Done So Far

### 2.1 Collecting Face Pictures

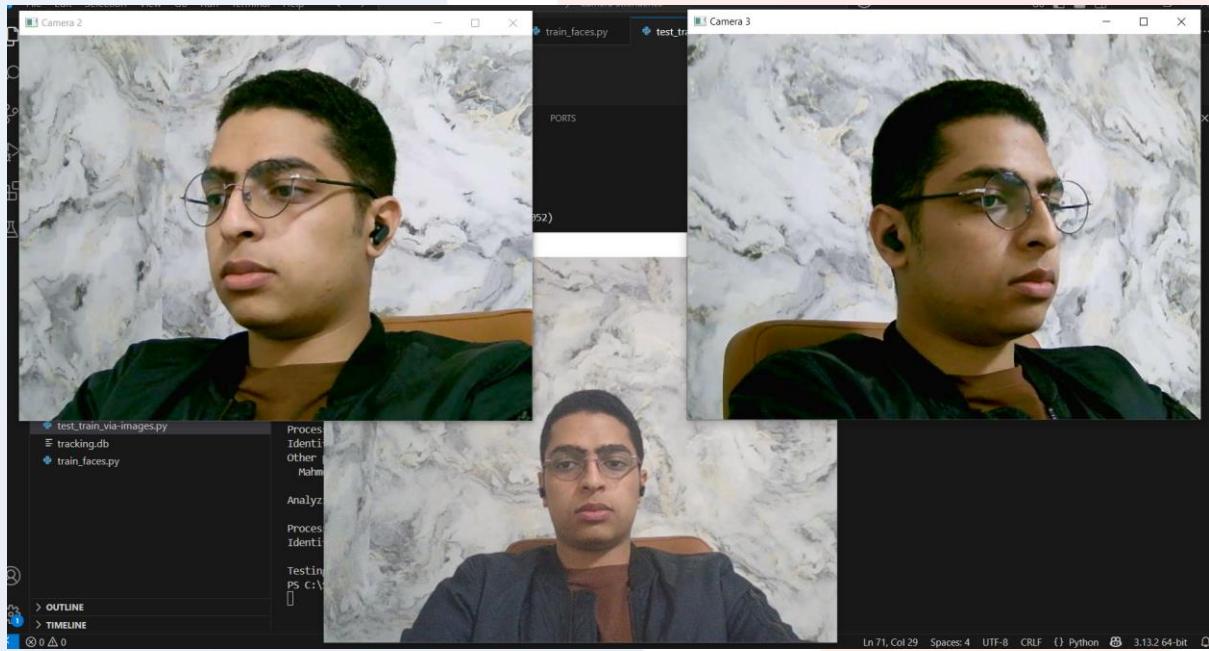
We took pictures of nine people in our office to teach the system who's who. The team members are:

- Eng. Mahmoud
- Eng. Mostafa
- Eng. Hagar
- Mrs. Dalia
- Mr. Yousef
- Gamila
- Mahmoud
- Ragab
- Abd Elrahman

We used one of the cameras in the office to snap these pictures and build our face collection.

### 2.2 Small Steps Taken

- **Set Up Three Cameras:** We placed three cameras—one at the entrance, one on “Floor 2,” and one in the office—to mimic the real setup.
- **Created a Scanning Program:** We made a simple program that scans faces from all three cameras every 5 seconds to collect data quickly.
- **Taught the System:** We used the face pictures to train the system to recognize our team.



## 2.3 Testing the System

After training, we tested the system with new pictures of our team. Here's how it did:

- **Dalia:** Recognized correctly (Accuracy: 95%)
- **Eng. Mahmoud:** Recognized correctly (Accuracy: 96%)
- **Gamila:** Recognized correctly (Accuracy: 97%)
- **Hagar:** Recognized correctly (Accuracy: 96%)
- **Mahmoud:** Recognized correctly (Accuracy: 92%)
- **Mostafa:** Recognized correctly (Accuracy: 94%)
- **Ragab:** Recognized correctly (Accuracy: 95%)
- **Yousef:** Recognized correctly (Accuracy: 98%)

The system worked well, recognizing everyone with high accuracy (92% or better). This shows it's ready for the next steps.

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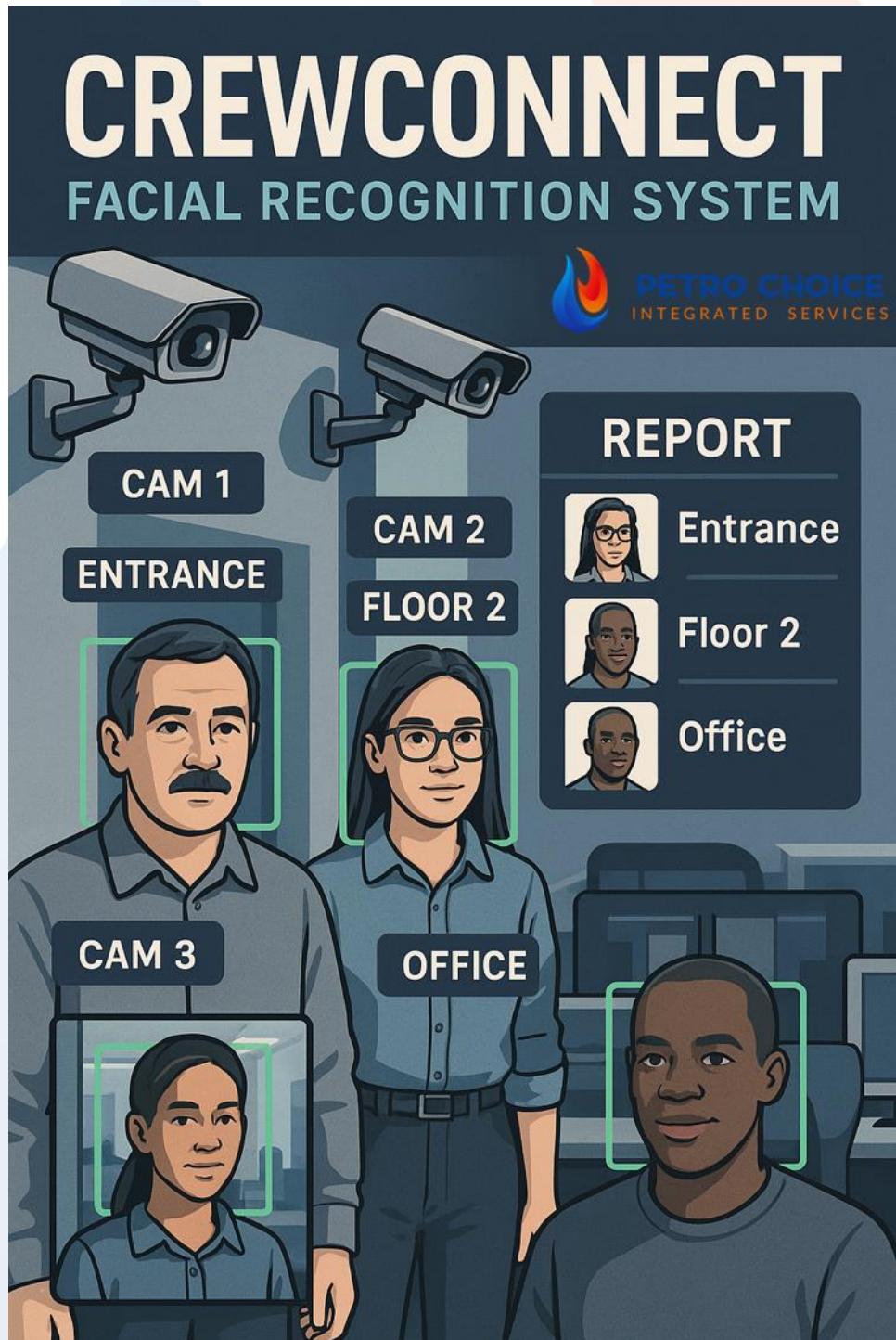
## 3. What's Next

- **Add More People:** Take pictures of more workers for the drilling building.
- **Use a Fourth Camera:** Add one more camera to complete the full setup.
- **Connect the program:** Connect the face recognition with report system via data base.
- **Improve the Report:** Make the location report easier to read and use.
- **Test in the Building:** Try the system in the real drilling building.
- **Make It Better:** Adjust the system so it works perfectly, even with tricky lighting.



# PetroChoice Face Recognition System:

## POSTER 1



## POSTER 2



The poster features the Petro Choice logo at the top left, followed by a large title "CREWCONNECT" and "FACIAL RECOGNITION SYSTEM". Below the title, a background image shows an industrial facility with three surveillance cameras labeled CAM 1, CAM 2, and CAM 3. A worker in a blue jumpsuit and yellow hard hat is walking through the facility. Three smaller video feeds from the cameras show close-ups of the worker's face, each with a green bounding box highlighting the detected facial area. To the right, a vertical status report box lists four entries: Jane Smith at the Entrance, John Doe on Floor 2, Emily Davis in the Office, and Mostafa, whose image is shown in a larger frame at the bottom right.

STATUS REPORT	
Jane Smith	Entrance
John Doe	Floor 2
Emily Davis	Office
<b>Mostafa</b>	