



Python Project Report
Automatic Face Tracker

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Introduction

The Automatic Face Tracker is a software that uses video feeds to detect and recognize faces in real-time. It utilizes the open-source face_recognition library to compare the faces detected in the video frames to a database of known faces. When a match is found, the software displays the feed of the corresponding camera in the GUI and logs the date and time of the detected face.

The software has a user-friendly graphical user interface (GUI) that allows the user to easily add or delete camera feeds. It uses the OpenCV and FFmpeg library to interact with a variety of camera systems, including file systems, URL streams, IP cameras, and USB hardware cameras. This allows the user to have a wide range of input formats to choose from.

The logging feature of the Automatic Face Tracker can be used to track the attendance of employees in a building or to monitor the activity of individuals in a specific location. It can also be used to track the dates and times that authorized individuals access a particular area or facility.

There are many potential applications for the Automatic Face Tracker. For example, it could be integrated with a door lock system to automatically unlock the door when an authorized face is detected. In schools, it could replace traditional attendance checklists with an automatic system.

To improve the performance and scalability of the software, the processing of the video streams can be distributed using edge computing. Alternatively, in small businesses, a headless server could be used to handle the processing load, with the client using a monitor to view the processed information.

Example Screenshot(s)

The screenshot displays the 'Face Recognition' application interface, which includes a top section with three live camera feeds, a middle section with configuration and input windows, and a bottom section with a log table.

Top Section: Live Camera Feeds

- Left feed: Two people sitting on a couch. The person on the left is labeled 'mayarin' and the person on the right is labeled 'Unknown'.
- Middle feed: A person's hands working on a circuit board.
- Right feed: A person's face in front of a screen displaying a heart and text.

Middle Section: Configuration and Input Windows

Config Window

- Token: [Empty field]
- Use Line Notify: ☐
- Face Detection Model: ☒ CNN ☐ HOG
- Logs Delay: 5
- Threshold: 0.5
- Box Color: Choose Box Color
- Text Color: Choose Text Color
- Buttons: Reset, Save and Exit, Exit

Input Window

- Enter Camera Source: [Empty field]
- Buttons: OK, Exit

Log Window

- Buttons: Exit, Delete, Add

Bottom Section: Log Table

Time	Name	Camera
2022-12-17T14:33:15.980496	mayarin	videos/fpaHA8TKz5Y.mp4
2022-12-17T14:32:30.244859	mayarin	videos/fpaHA8TKz5Y.mp4
2022-12-17T14:32:28.692521	mayarin	videos/fpaHA8TKz5Y.mp4
2022-12-17T14:12:07.221876	linus	videos/YF248uEezjl.mp4
2022-12-17T14:12:05.843103	linus	videos/YF248uEezjl.mp4
2022-12-17T14:12:05.289105	mayarin	videos/fpaHA8TKz5Y.mp4
2022-12-17T14:12:04.933532	mayarin	videos/fpaHA8TKz5Y.mp4
2022-12-17T14:11:44.877504	mayarin	videos/fpaHA8TKz5Y.mp4
2022-12-17T14:11:44.865505	mayarin	videos/fpaHA8TKz5Y.mp4
2022-12-17T14:11:37.424133	mayarin	videos/fpaHA8TKz5Y.mp4

Refresh

Code

<https://github.com/kawinhill1112/pyFaceRec/>