# CodeClash

# Space Station Object Detection Application Documention

## **Overview**

**CodeClash** is an intelligent image-processing application where users can:

- 1. Start their device camera.
- 2. Capture an image from the live camera feed.
- 3. Store the image in MongoDB and Google Drive.
- 4. Trigger image analysis via a Python script.
- 5. Display the analyzed image back on the front

## **Frontend Interaction Flow**

#### 1. Start Camera

Starts the webcam feed in the browser using the MediaDevices API.

#### 2. Capture Image

- Captures a frame from the webcam feed.
- Sends the captured image (as a blob or base64) to the backend.

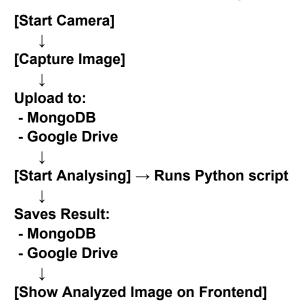
#### 3. Start Analysing

Sends a request to the backend to start the Python image analysis script.

## 4. Display Analysed Image

• After analysis, fetches the processed image and displays it to the user.

# **Feature Flow Summary**



# **Tech Stack**

Layer	Technology
Frontend	React.js, MediaDevices API, Axios
Backend	Node.js, Express.js
Database	MongoDB
Storage	Google Drive API
Image Analysis	Python (YOLO/custom)
Deployment	Render / Vercel / Local

## **Problems Faced**

#### 1. Deploying Node.js and Python Together

Deploying both runtimes in a single project was challenging on platforms that support only one. I solved this by using Node.js's child\_process to call the Python script and setting up a custom environment on Render that supports both.

#### 2. Pushing Large Folders to Git

Some folders (e.g., model weights or output data) were too large to push to GitHub. This caused slow commits and push errors. I resolved it by using .gitignore to exclude large directories and storing heavy files externally.

#### 3. Automating Best Model Selection

I wanted the system to automatically select the best-performing model for analysis. I implemented logic to load the most recent or highest-accuracy model dynamically during runtime, ensuring better results without manual intervention.

**Link For Application:-**

**Space Station Object Detection Web link** 

**GitHub Repo Link For Application**