

Lost and Found Glasses

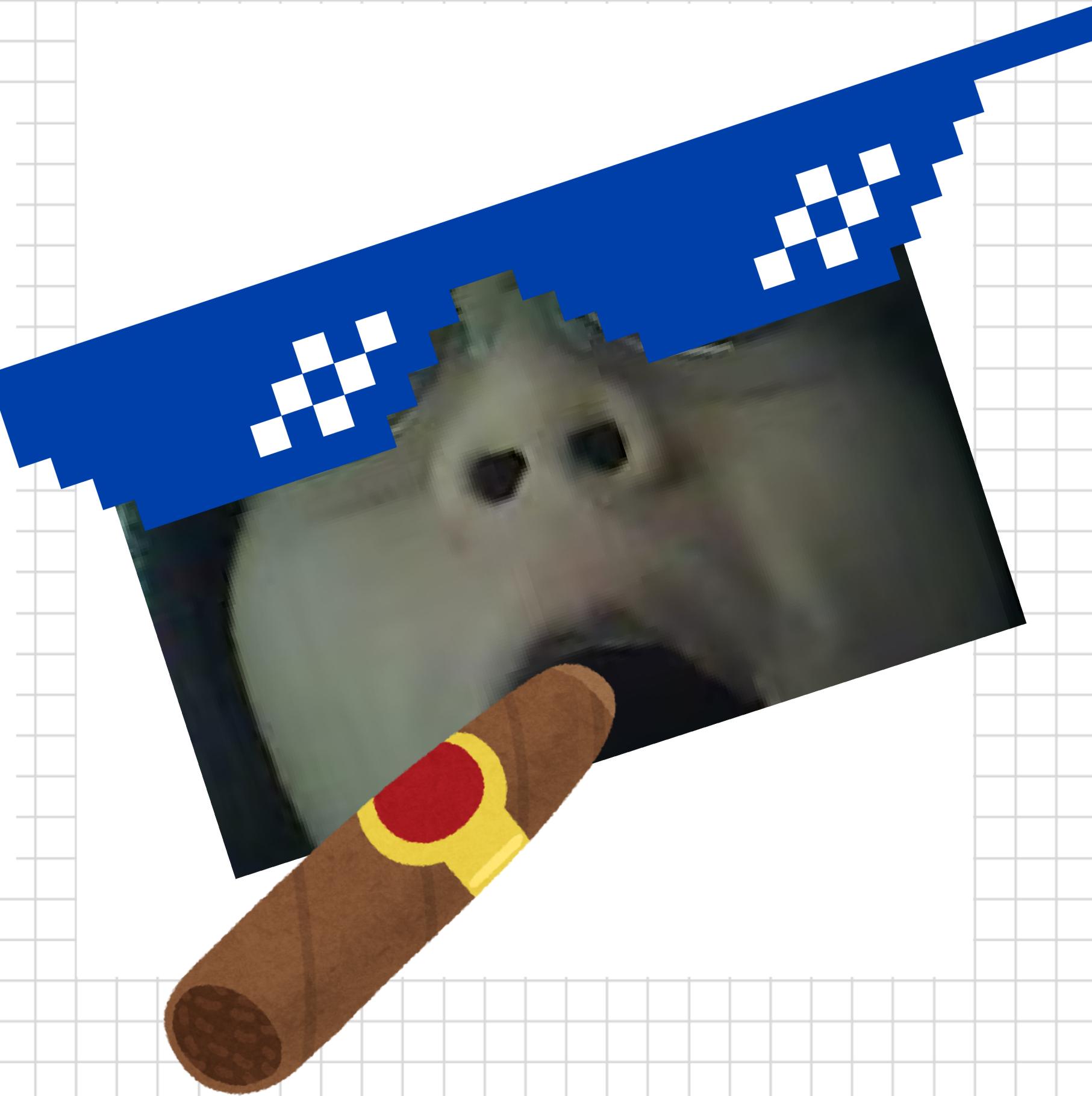
Group 9

資工三A 許哲瑋

資工三A 吳奮

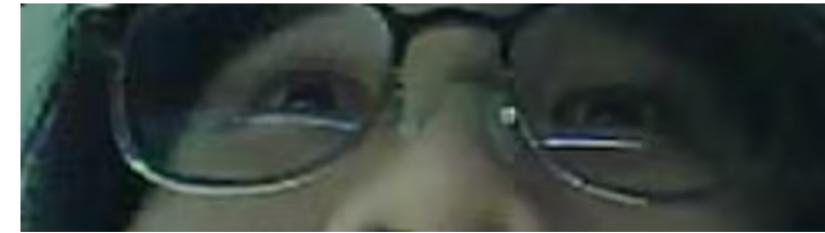
資工三A 陳珏嶧

資工三B 姜泓緯





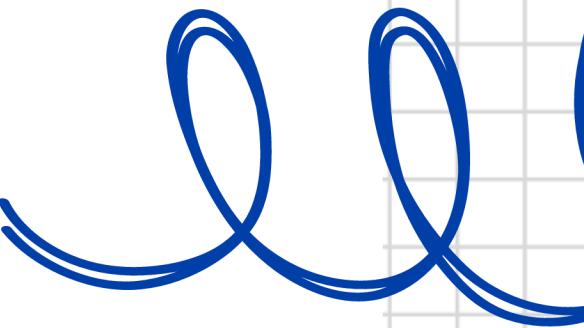
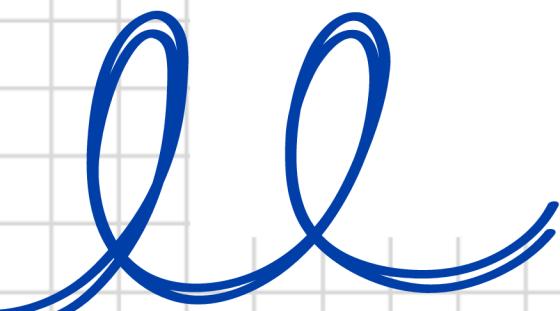
Introduction



Motivation

Objective

Solution



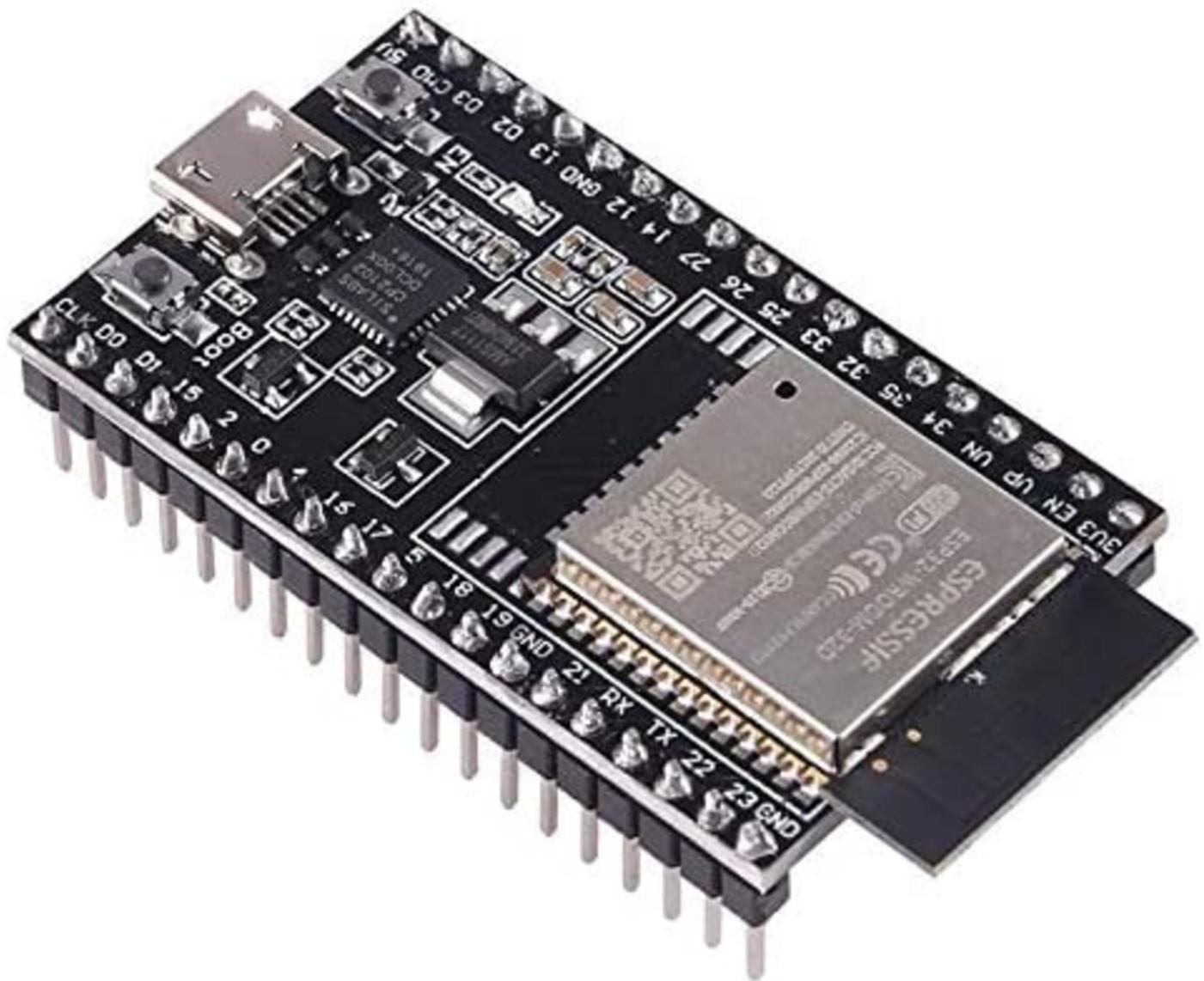
The Role of ESP32 in Our System

Powerful and Low-Cost Microcontroller

Integrated Wi-Fi and Bluetooth

Suitable for Embedded Systems

Central Role in the Project!



Training

Dataset

- Take pictures of our target item
- Augmented approaches are used

Detection Framework Selection

- The framework must eliminates the need to reload the model for each frame.
- Could reduces latency and enables near real-time object recognition.

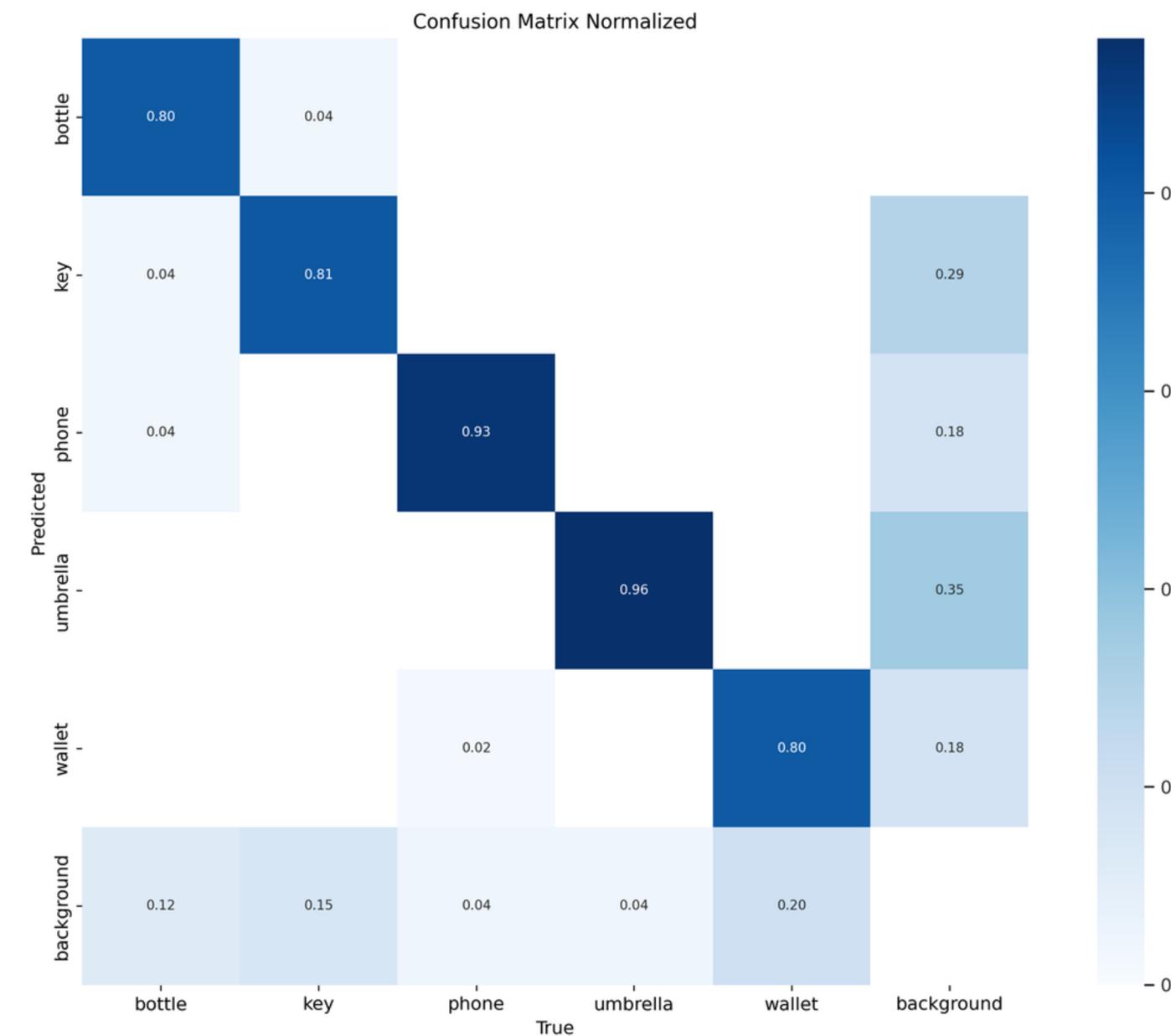
Ultralytics YOLO11

- Optimize pretrain model





Analysis



Normalized Confusion Matrix

Implementation

ESP32 Signal Hosting

Video Stream Processing

Object Detection

Database Update

Display Results





DEMO

