GMSOFT X CLASSIFIERS

CAPSTONE DESIGN IN COMPANYS PROJECT 1: CRIME-RELATED OBJECT DETECTION AND CLASSIFICATION SYSTEM

WOOSONG UNIVERSITY

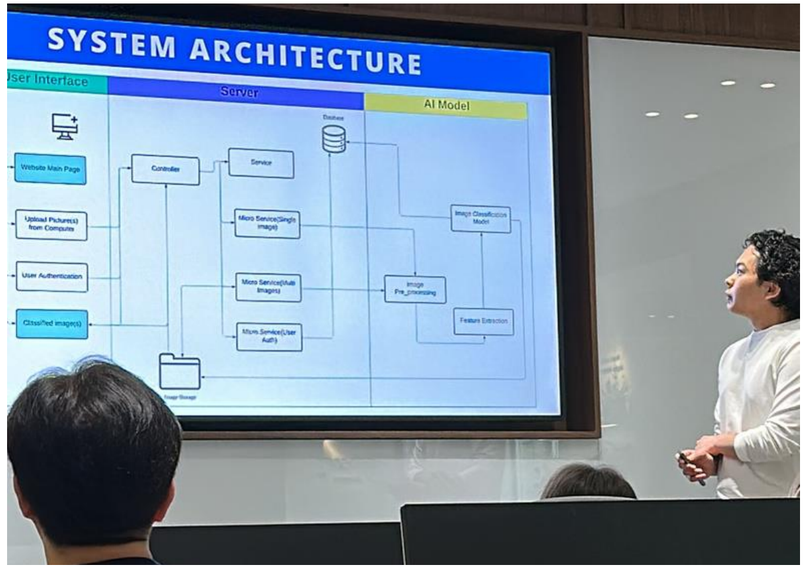
ENDICOTT COLLEGE OF INTERNATIONAL STUDIES

PARTICIPATING COMPANY

GMDSOFT

GLOBAL MOBILE & DIGITAL SOFTWARE

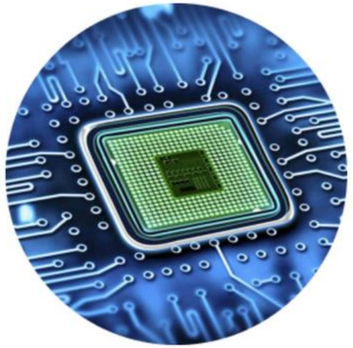
“WE EMPOWER YOUR INVESTIGATION”



Digital & Mobile Forensic Solution

MOBILE FORENSIC
SOFTWARE

DIGITAL FORENSIC
SOFTWARE



MOBILE FORENSIC
HARDWARE

MOBILE FORENSIC
PACKAGES

PROBLEM

Phone data is increasingly being used as part of criminal investigations. Evidence hiding in photos and videos on the phone can be a **clue to investigate a crime.**

How **many hours** it would take to analyze whole photo gallery of the suspect if they have thousands, hundreds of thousands photo?

WHAT IS OUR SOLUTION?

Create a model that classify given images into **10** predefined categories related to weapons and other dangerous objects

With automated image classification there is no need to manually check all the data and waste precious time and human resources of policeman and investigators.

10 CHOSEN CATEGORIES

RIFLE

PISTOL

BALACLAVA

DRUGS

SMOKING

BANKNOTES

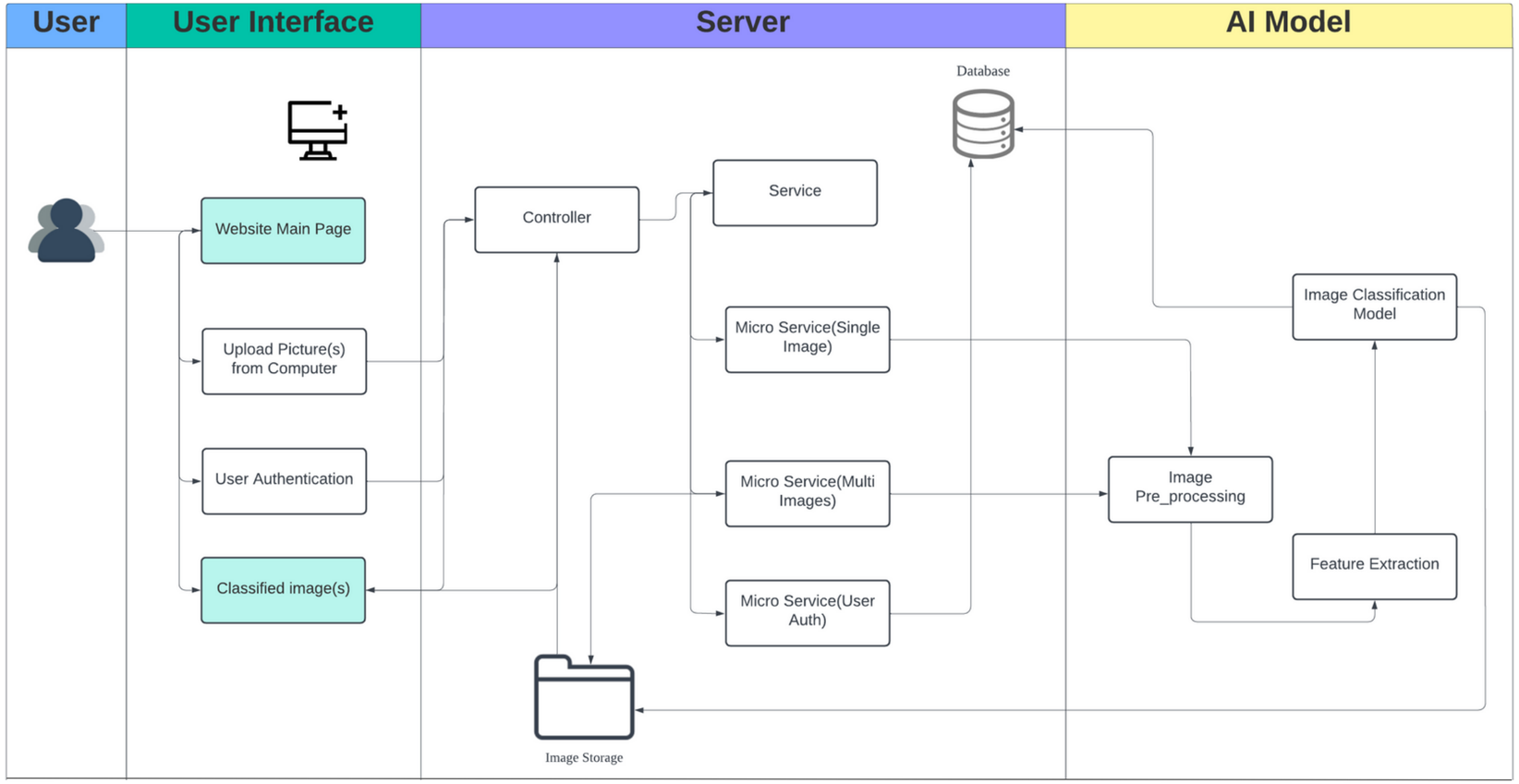
BLOOD PATTERN

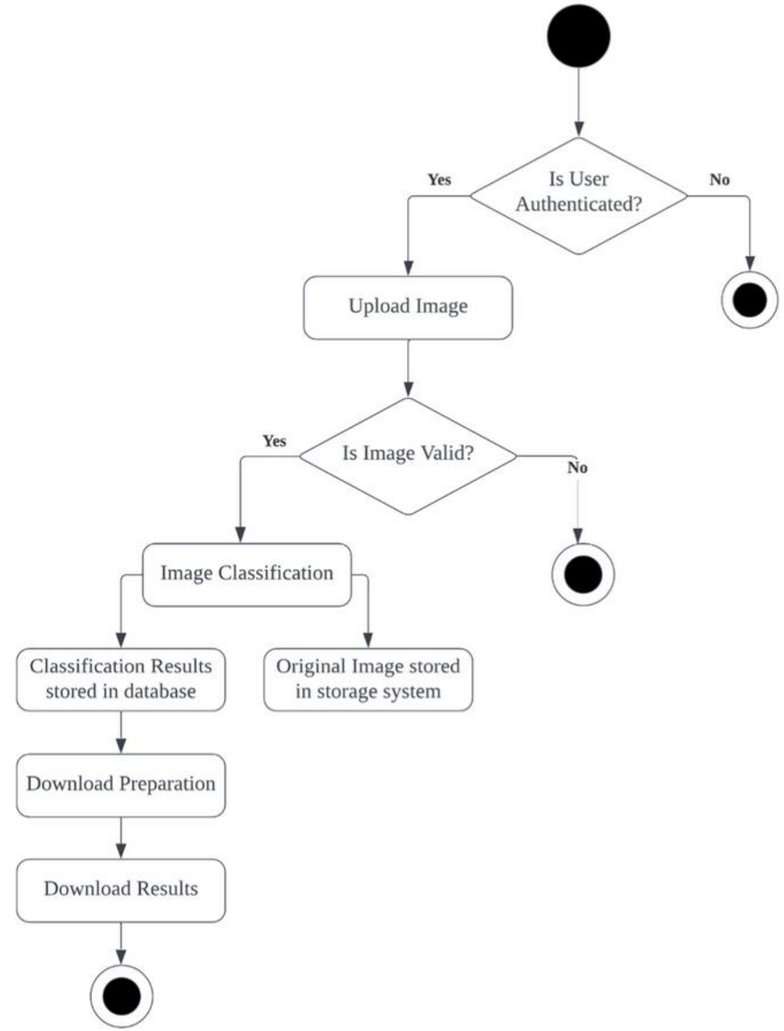
KNIFE

BAT

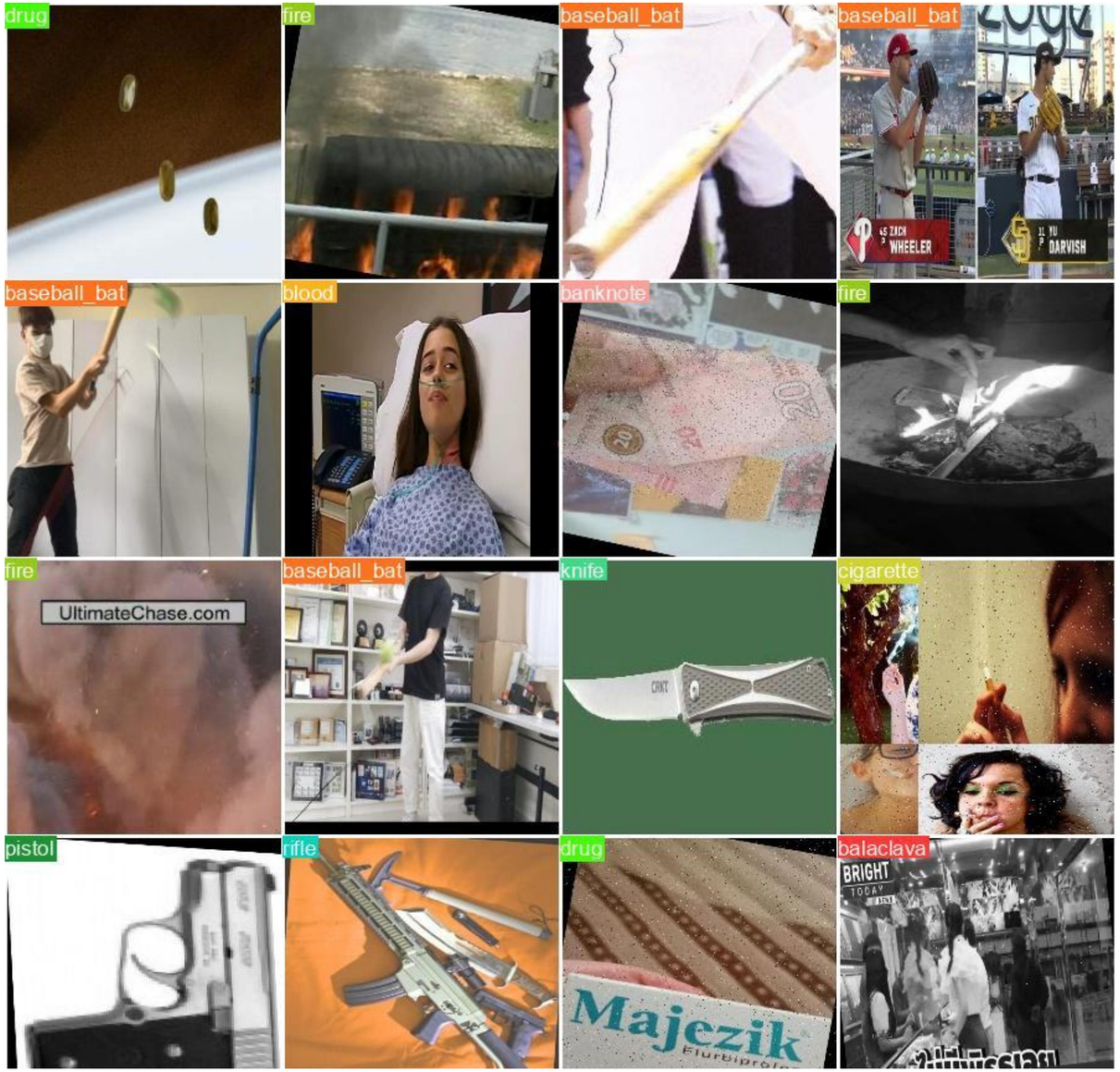
FIRE

SYSTEM DESIGN

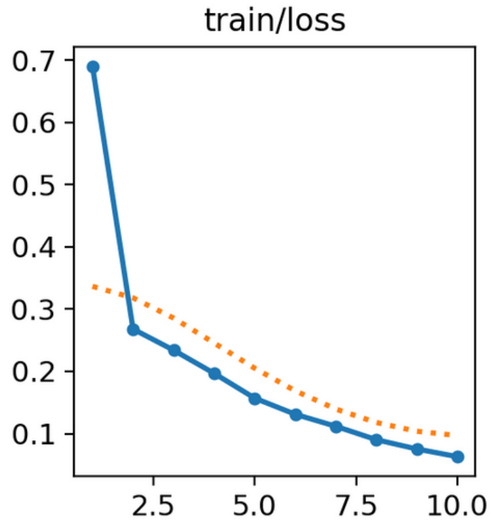


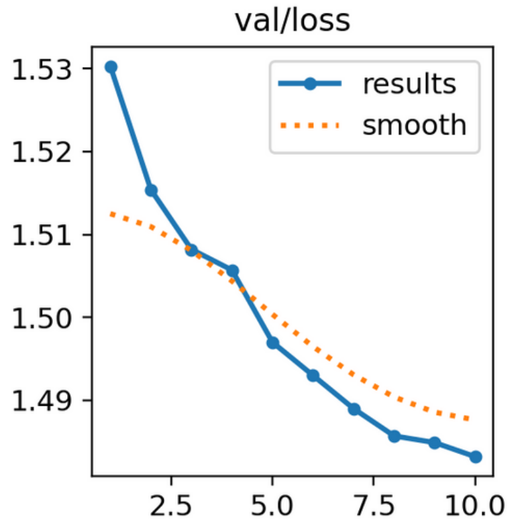


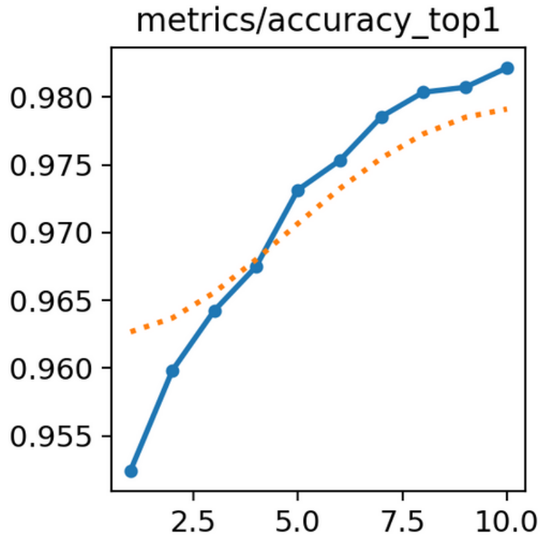
◘ Research Result 1. 98% Accuracy
- Higher accuracy without "Others" class

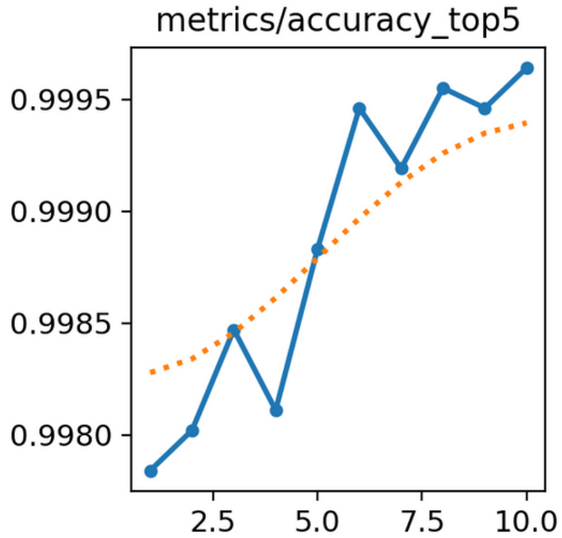


10 main classes (rifle, pistol, balaclava, drug, cigarette, banknote, blood pattern, knife, baseball bat, fire)
Dataset: ~6,200 images each class

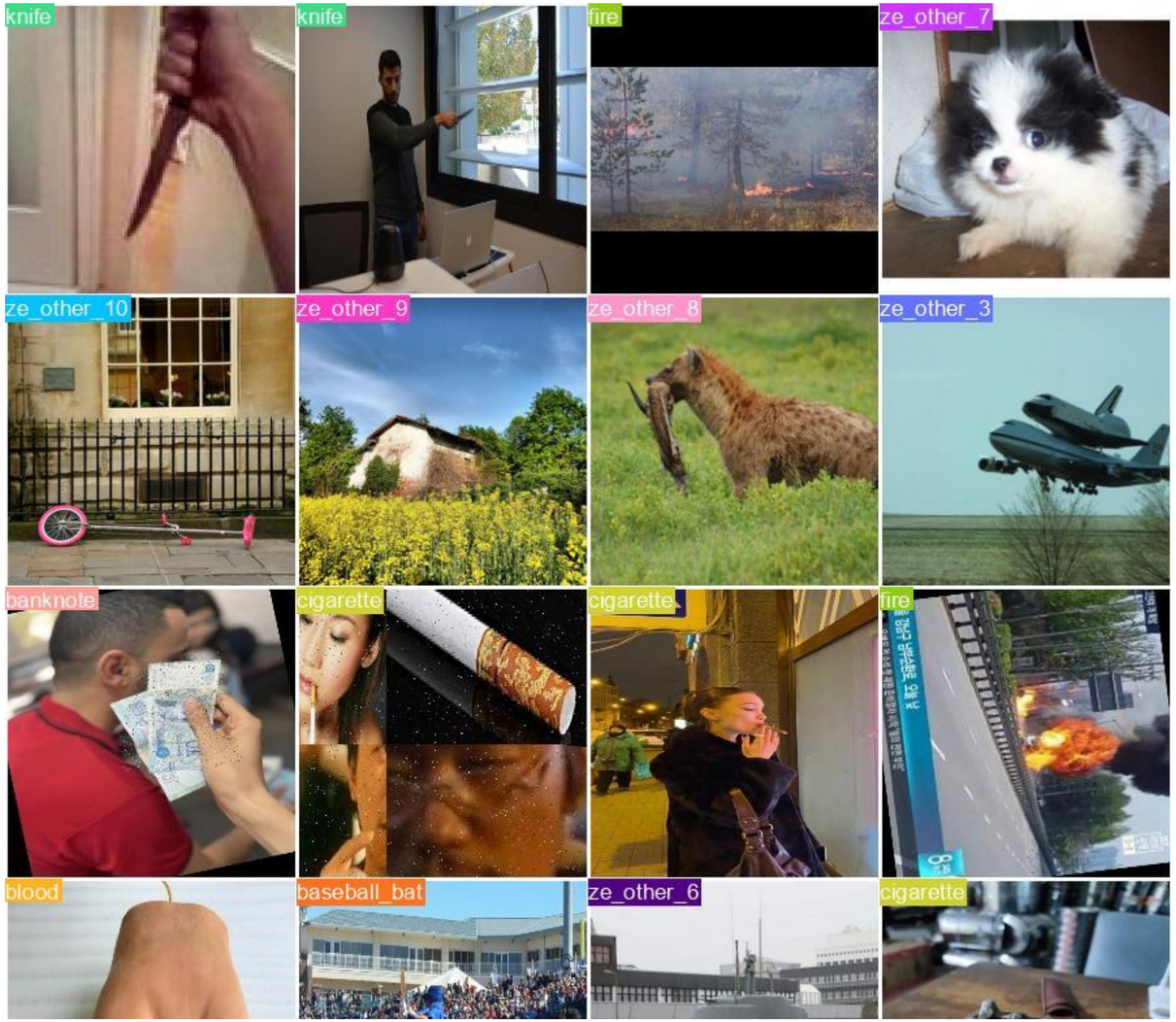




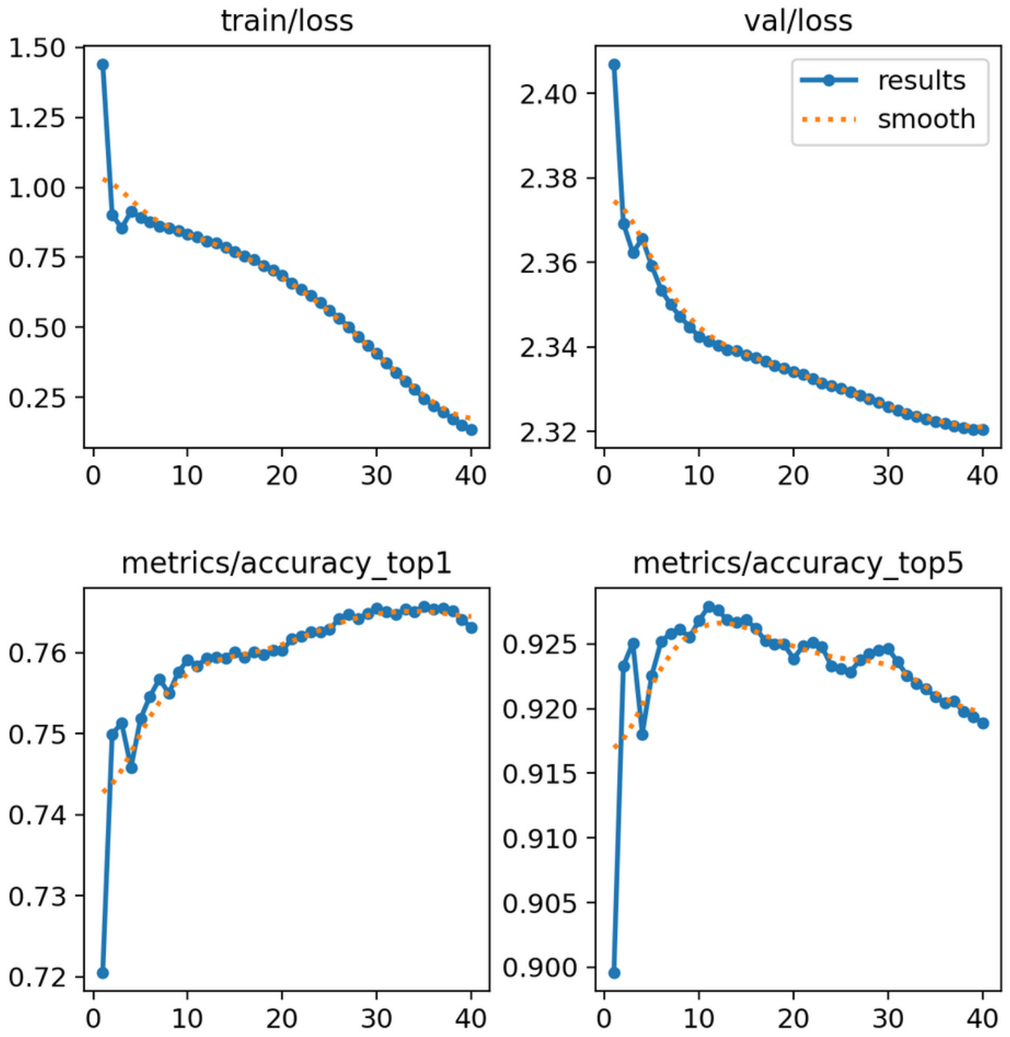




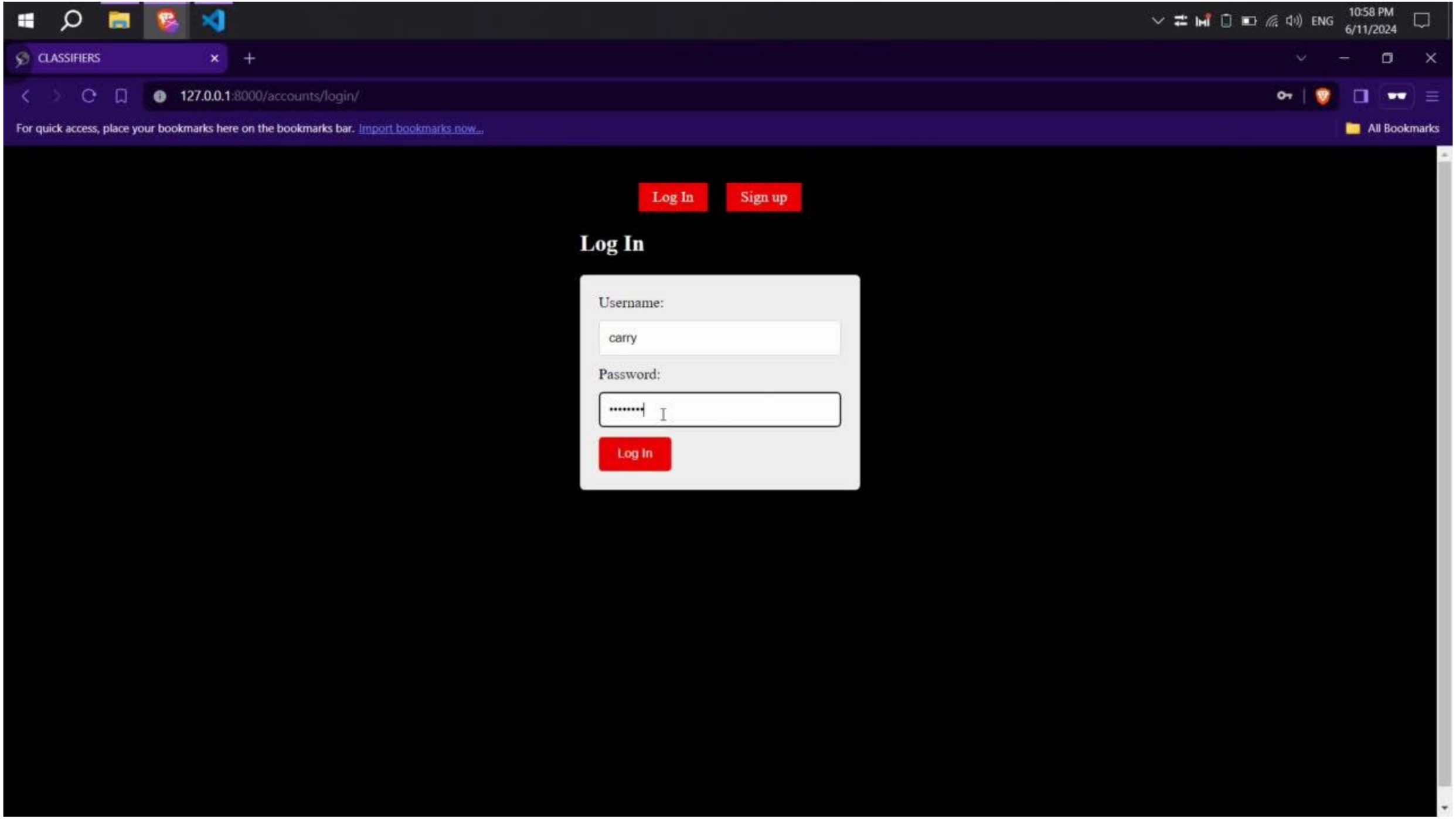
◘ Research Result 1. 76% Accuracy
- Lower accuracy with "Others" class



10 main classes ~6,200 images + 10 “other” classes ~2,200 - 4,500 images each “other” classes



Demo Video


CLASSIFIERS
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CONCLUSION

- We successfully created fully functioning web application allows to upload large amount of pictures that would be automatically categorized, allowing investigators to quickly find crime-related evidence in photos.

- Web application provide 2 different model and user can choose output by their performance

- User-friendly UI-UX provides separated folders with images by classified class