

**MICHIGAN STATE**  

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**UNIVERSITY**

# Alpha Presentation

## Small Object Detection Using CCTV Cameras

### The Capstone Experience

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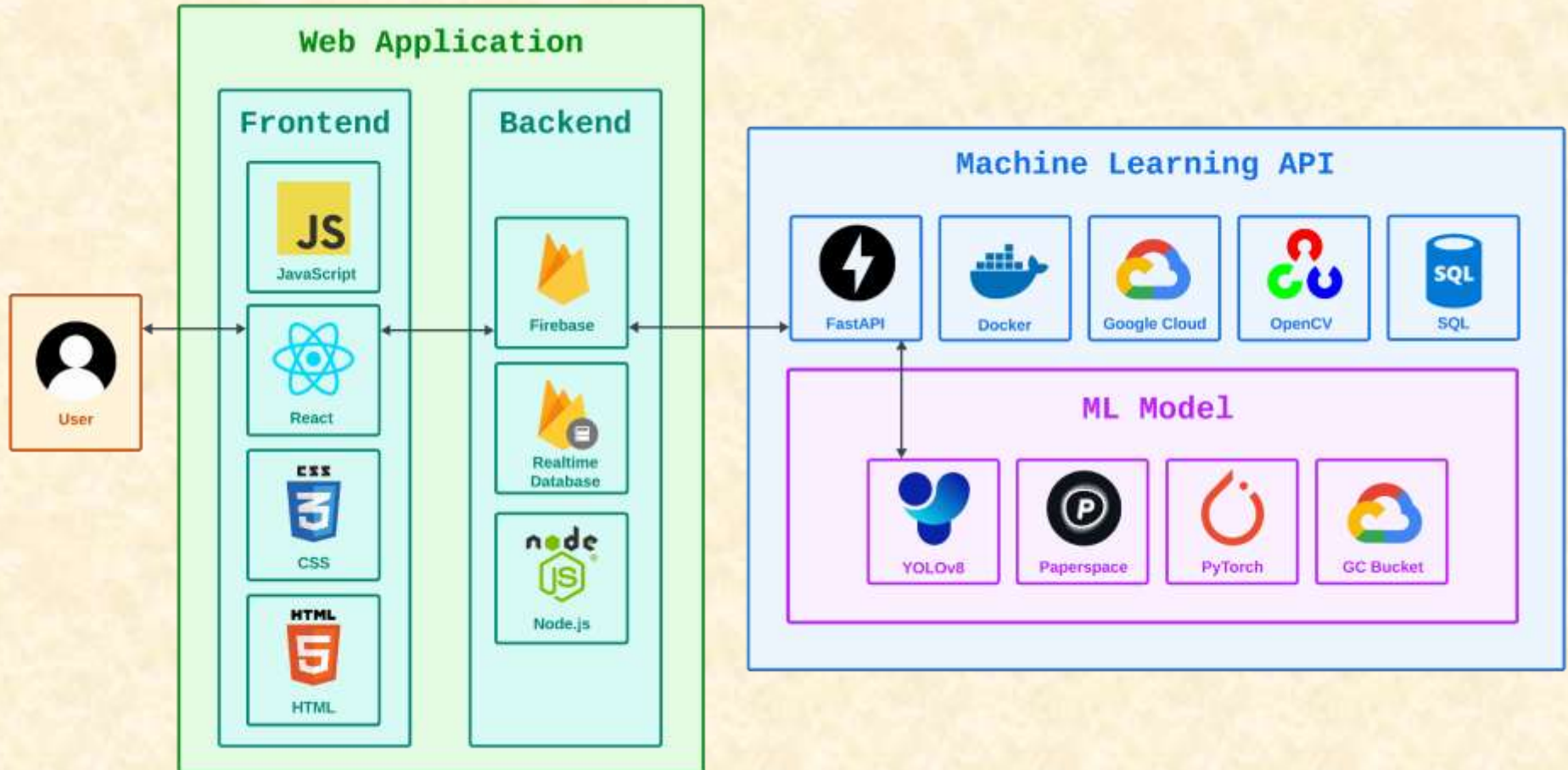
*From Students...  
...to Professionals*

# Project Overview

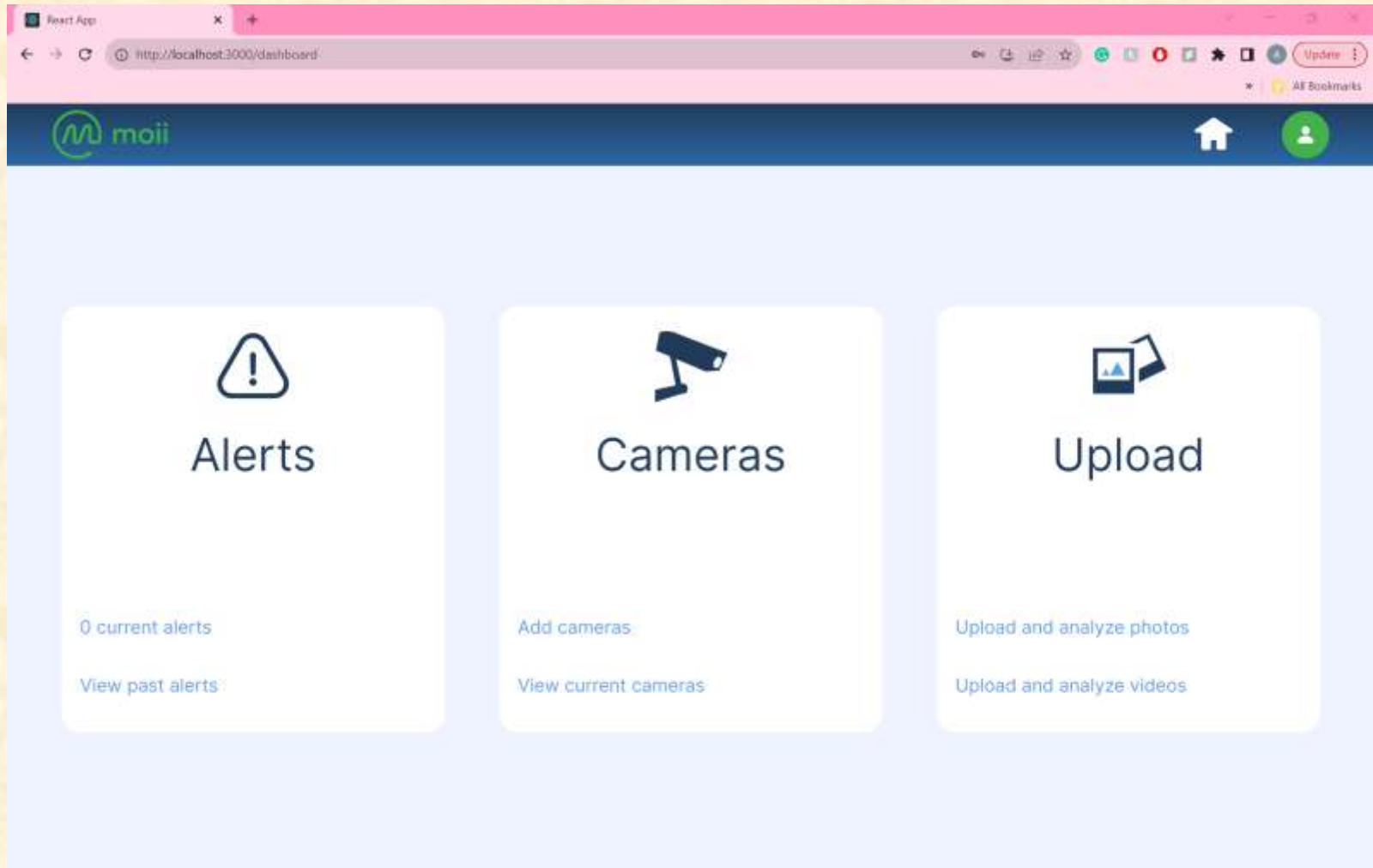
- Real-Time CCTV Firearm Detection
- Real-Time Alerts
- User Friendly Interface
- Minimize Response Times and Save Lives



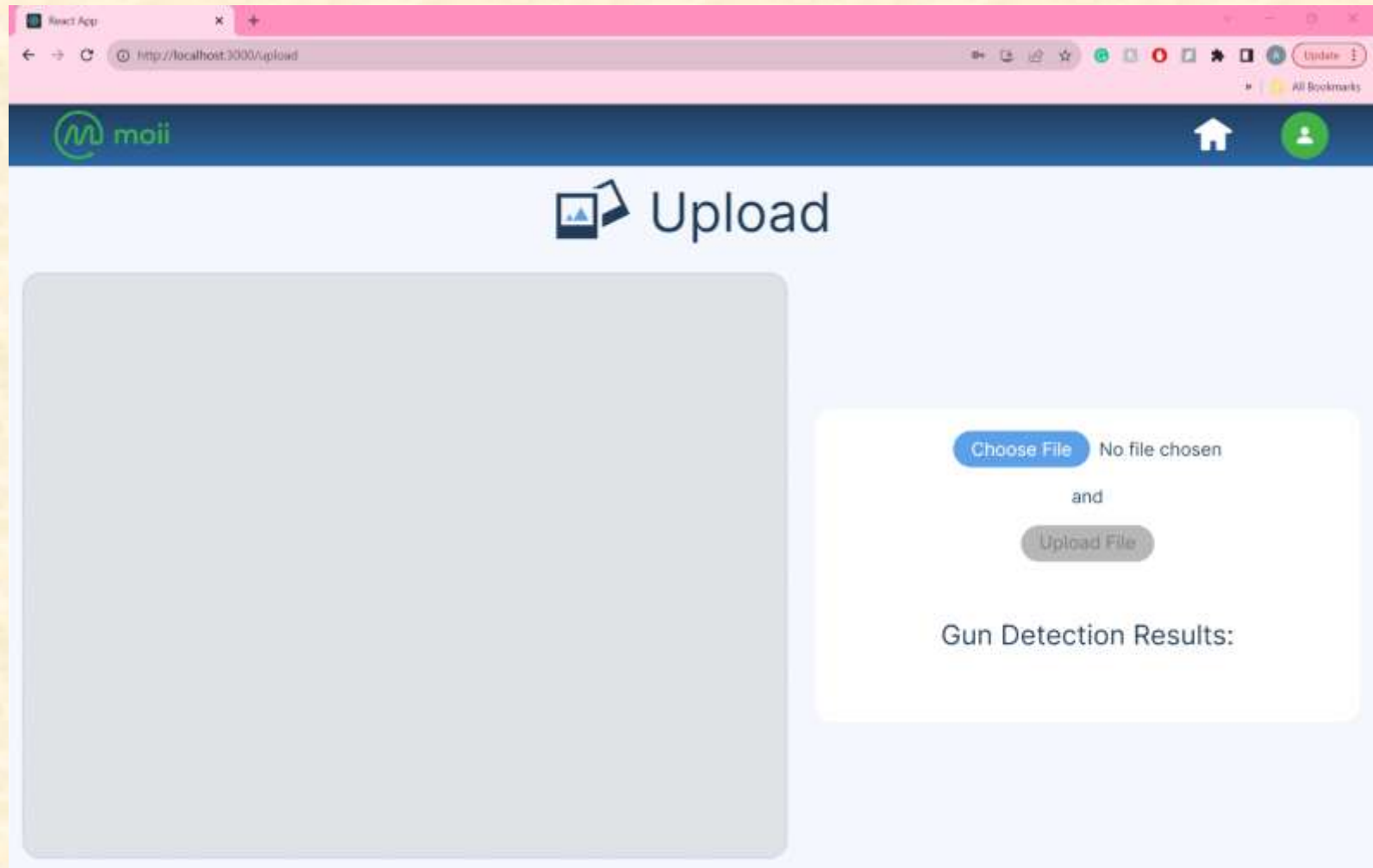
# System Architecture



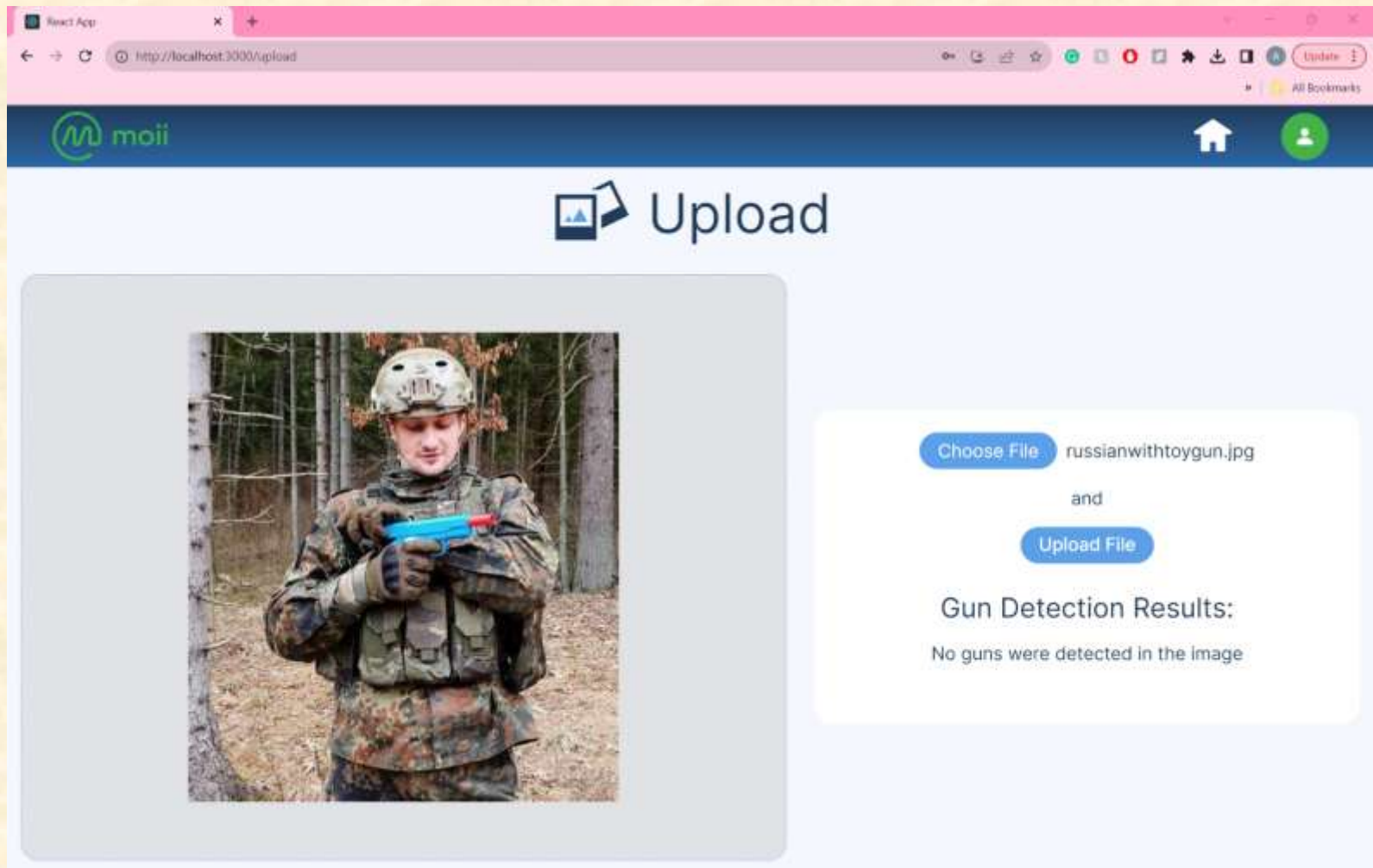
# Dashboard Page



# Upload Dashboard w/o Detection



# Upload Dashboard with Detection



The screenshot shows a web browser window displaying a dashboard. The browser's address bar shows the URL `http://localhost:3000/upload`. The dashboard has a dark blue header with the 'moii' logo on the left, a home icon, and a user profile icon on the right. Below the header, the word 'Upload' is displayed with a document icon. A large image placeholder contains a photograph of a person in military camouflage gear holding a blue toy gun. To the right of the image, there is a white box containing the following text: 'Choose File' followed by 'russianwithtoygun.jpg', 'and', 'Upload File', 'Gun Detection Results:', and 'No guns were detected in the image'.



# Upload Dashboard with Detection

React App

http://localhost:3000/upload

moii

## Upload

gun: 0.91

gun: 0.85

Choose File guywithagun.jpg

and

Upload File

Gun Detection Results:  
**GUN DETECTED**



# What's left to do?

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- Trigger Real-Time Alerts
- Camera Dashboard
- Display Real-Time CCTV Footage on Web-App
- Support Simultaneous Detection
- Decrease CCTV Footage Streaming Latency
- Improve Model Accuracy and Speed





# Questions?

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