

System Requirements

1. Data Preparation:

- Obtain datasets for object detection and classification tasks.
- Merge the collected datasets correctly.
- Organize the merged dataset to ensure no missing or redundant data.
- Use concepts like data augmentation during the organization process.
- Research and determine the appropriate types of datasets for object detection and classification.

2. Model Creation:

- Select and train an appropriate detection model for object detection using the merged datasets.
- Train a separate model for object classification.
- Ensure both models accurately identify objects with the necessary information.
- Train the models with the right parameters to achieve high performance.
- Focus on key metrics such as Accuracy, Precision, Recall, and F1-Score to ensure good results.

3. Scenario Creation:

- Create scenarios to demonstrate the system's successful operation.
- Produce necessary videos for these scenarios.
- Test the system using the created videos.
- Ensure the video results are successful.
- Create videos in suitable environments, such as games that resemble real-life visuals (e.g., Squad, Arma).

4. Threat Assessment:

- Enable the system to calculate the threat level of objects successfully.
- Use specific parameters to calculate threat values.
- Record the drone's altitude at short intervals while capturing video to determine the real distance between objects using pixel distances.
- Update threat values based on whether objects are enemy or friendly.