# -Computer Vision-Aircraft and other Vehicles

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## Objectives

- Initial goal: Create an image classification program based on YOLO that attempts to locate airplanes in images
- Continuation: Build up on previous program by introducing other vehicles (cars, trucks, helicopters)

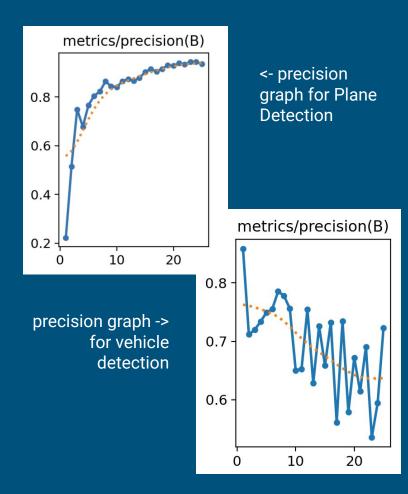


## Methodology

- Researched architecture best suited for our goal (YOLOv8, OpenCV)
- 2. Gathered various datasets to test and train the model with (Roboflow, Kaggle)
- 3. Compiled datasets onto our Roboflow workspace
- Trained the YOLOv8 model on our datasets (via Google Colab)
- 5. Created a working GUI with a basic file viewer to apply the model to locally-saved images

### Outcomes

- Aircraft Detection Model
  - Achieved ~93% precision
- Vehicles and Aircraft Detection
   Model
  - Achieved ~59% precision
- Extra features: functional GUI



# Model on Aircrafts

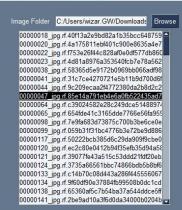


## Model on Multiple Vehicle Classes









Swap Program

Exit Program

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Swap Program Exit Program

Exit Program





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Swap Program Exit Program



#### Image Folder

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Swap Program

Exit Program

## References

#### Links to Online Deployment (Roboflow workspace):

- Plane detection/tracking:

   https://app.roboflow.com/cmsc421-final-project/plane-detection-eyzak/visualize/2
- Vehicle detection/classification:
   <a href="https://app.roboflow.com/cmsc421-final-project/vehicle-detection-ansgg/visualize/1">https://app.roboflow.com/cmsc421-final-project/vehicle-detection-ansgg/visualize/1</a>

#### Example video link: (copy and paste link into model)

 https://www.youtube.com/watch?v=1Lqjy25ZBDc&t=58s&ab\_channel= AirshowWorld



