
LIDAR VS RGB

AN ANALYTICAL
APPROACH

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OUR TEAM



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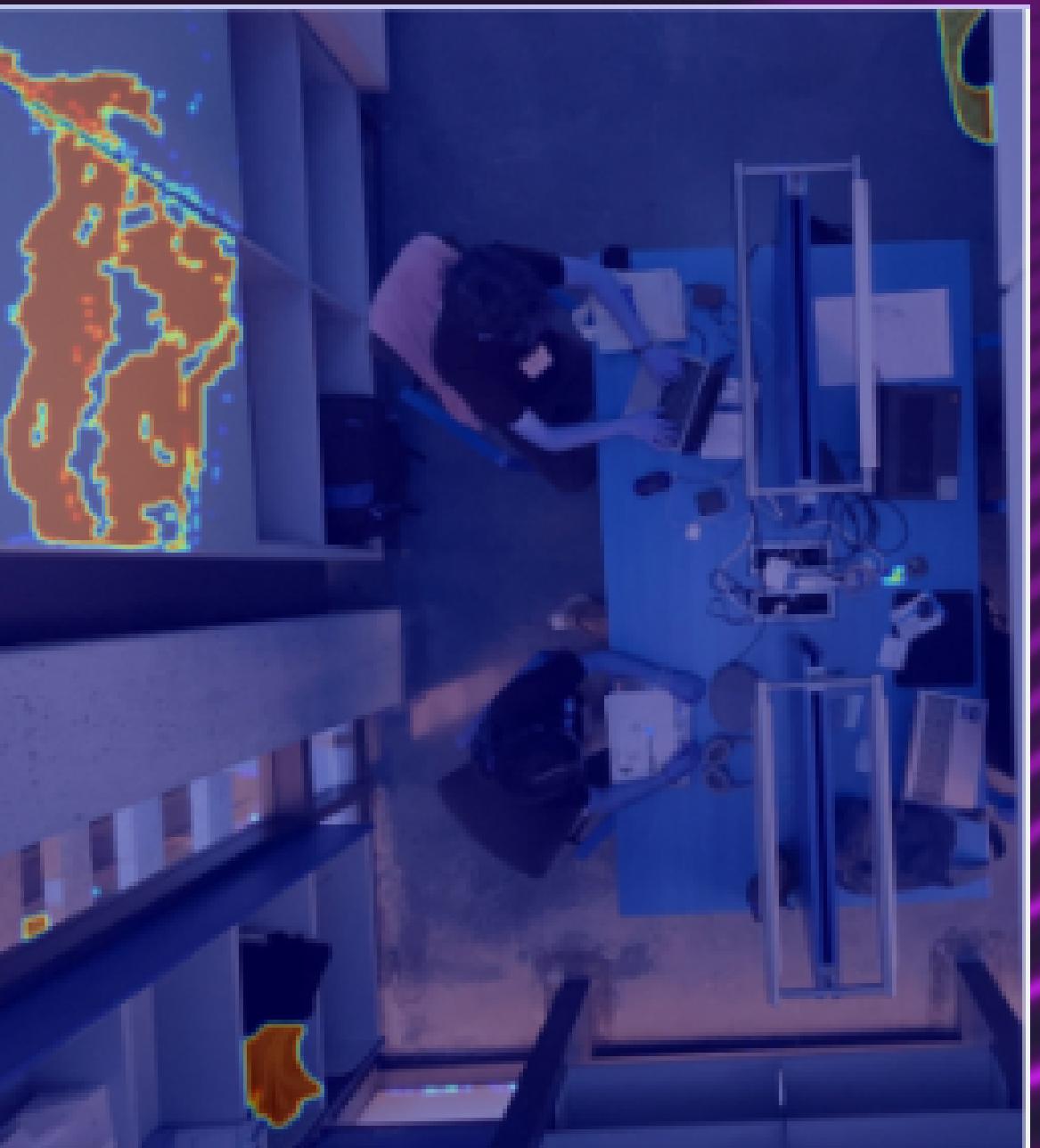
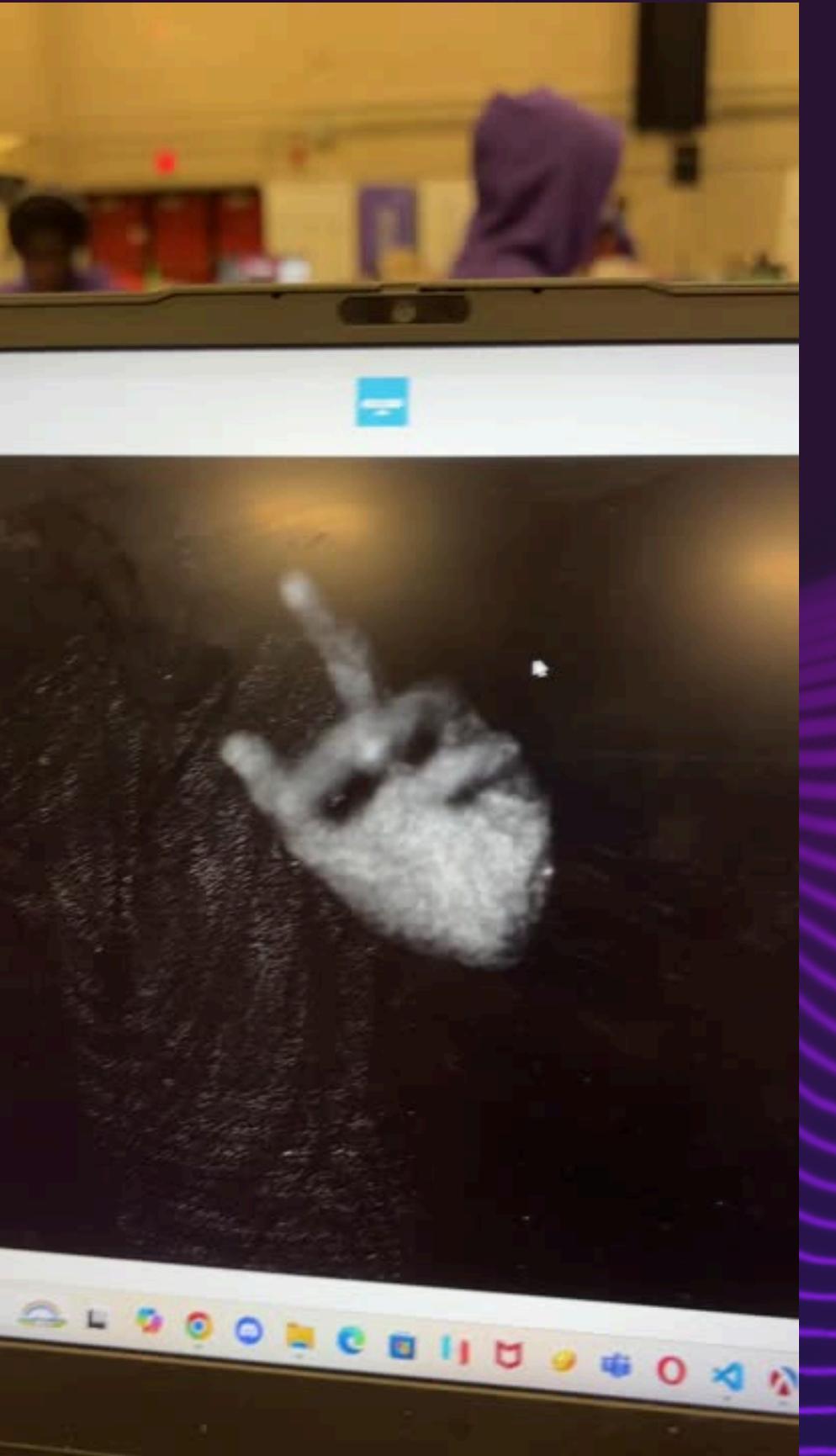
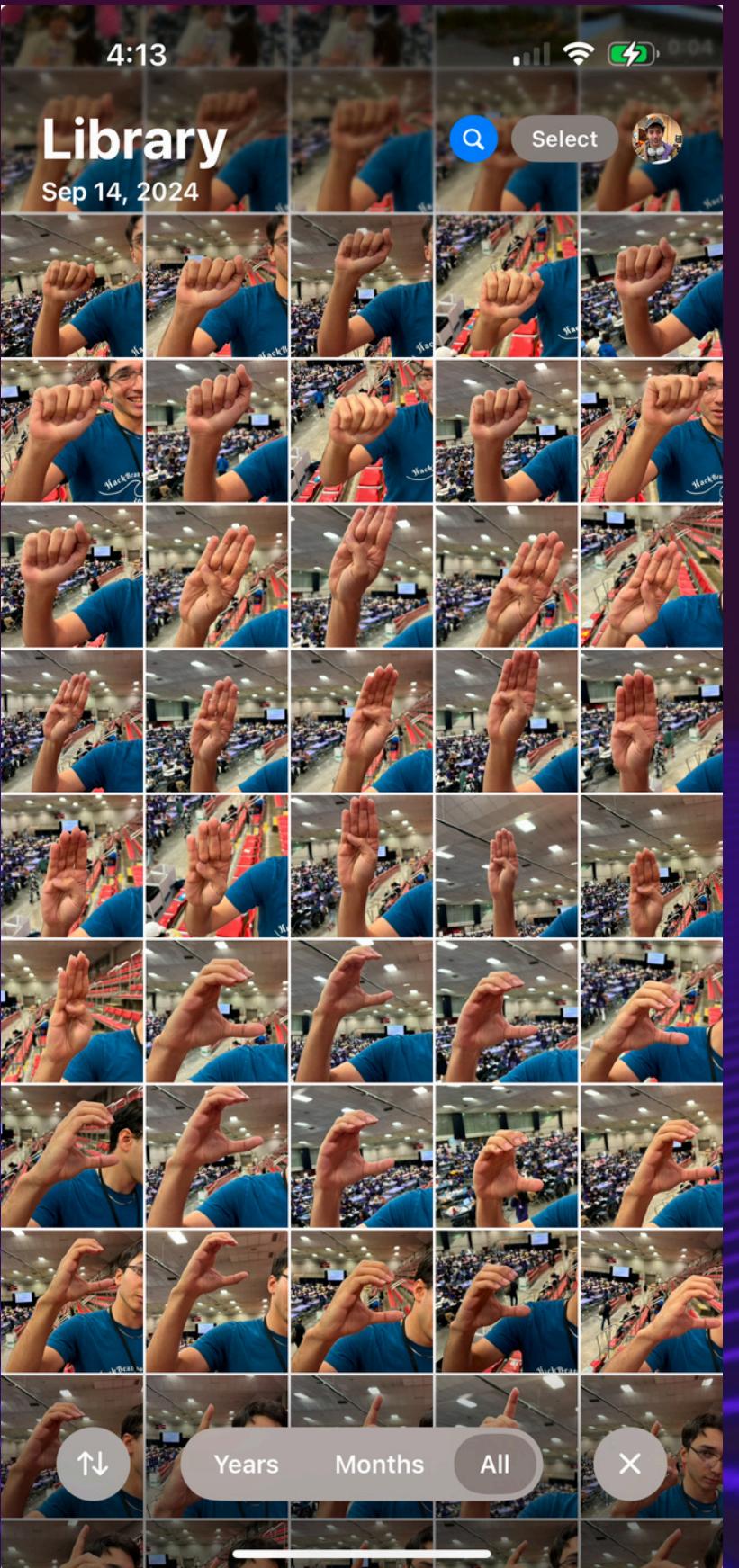
**JAY
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*Data Engineer,
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OUR GOAL

- obtain LiDAR and RGB data
- train identical image classification models
- comparative analysis of LiDAR and RGB fed models
- determine “best” colorspace for image classification

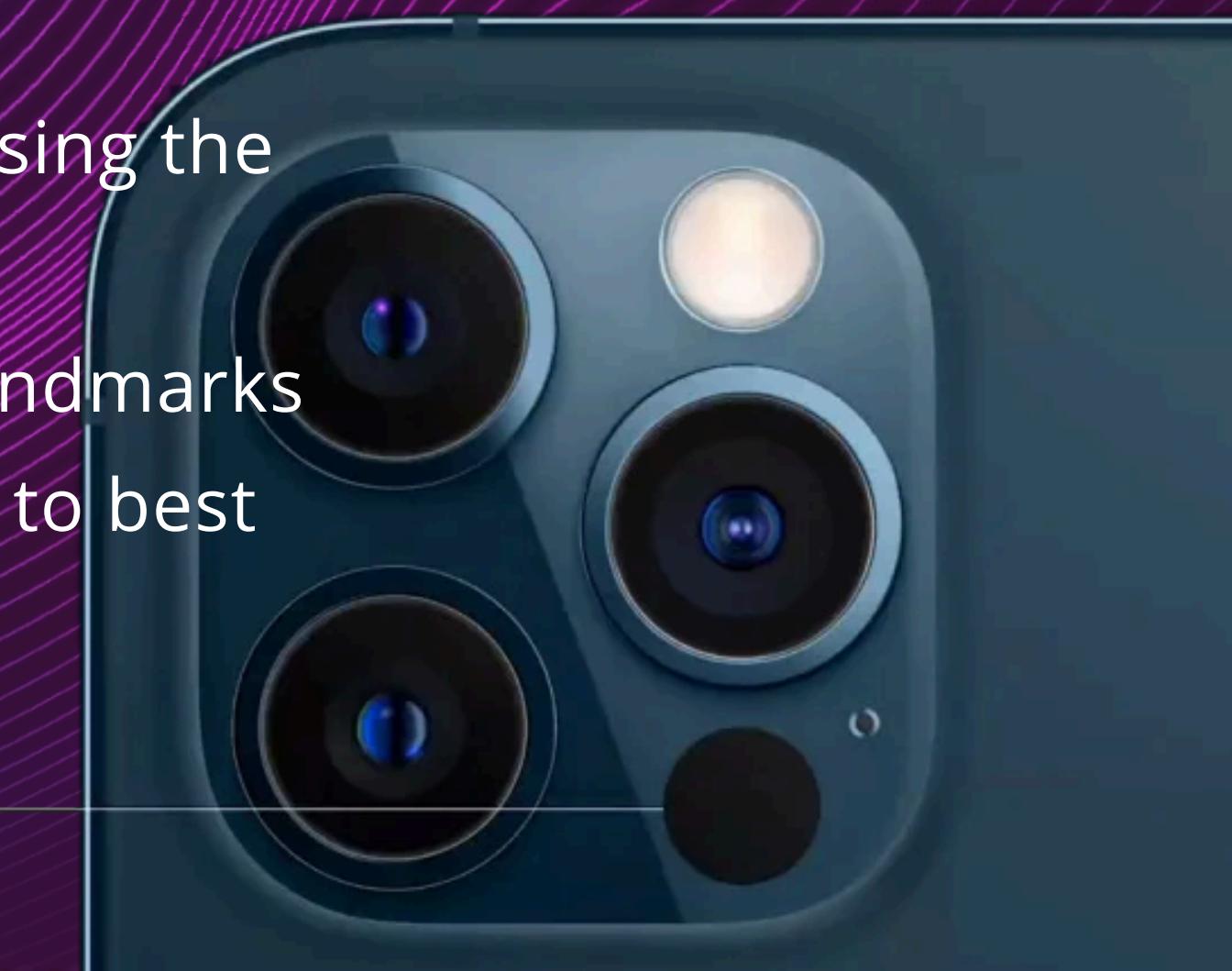




WHY LIDAR

- LiDAR, which stands for Light Detection and Ranging, allows us to capture a 3D map of the objects captured from a camera without having to worry about the background/environment
- Because LiDAR isolates the image from any noise, this improves classification model accuracy
- In computer vision, this is extremely useful for decreasing the visual noise and clutter of data
- In machine learning terms, this allows us to use the landmarks from our LiDAR capture to train a classification model to best estimate what it is we are looking at

LiDAR Scanner



HOW LIDAR WORKS



APPLE IPHONE



LIDAR CHANNEL



FACE ID

TRAINING OUR MODEL



TASK 1: CREATING A MODEL

We will create our classification model using TensorFlow+scikit-learn, speeding up the process using the CUDA library



TASK 2: TRAINING THE MODEL

Here we'll need to fit our model to the dataset and supply hyperparameters for best results



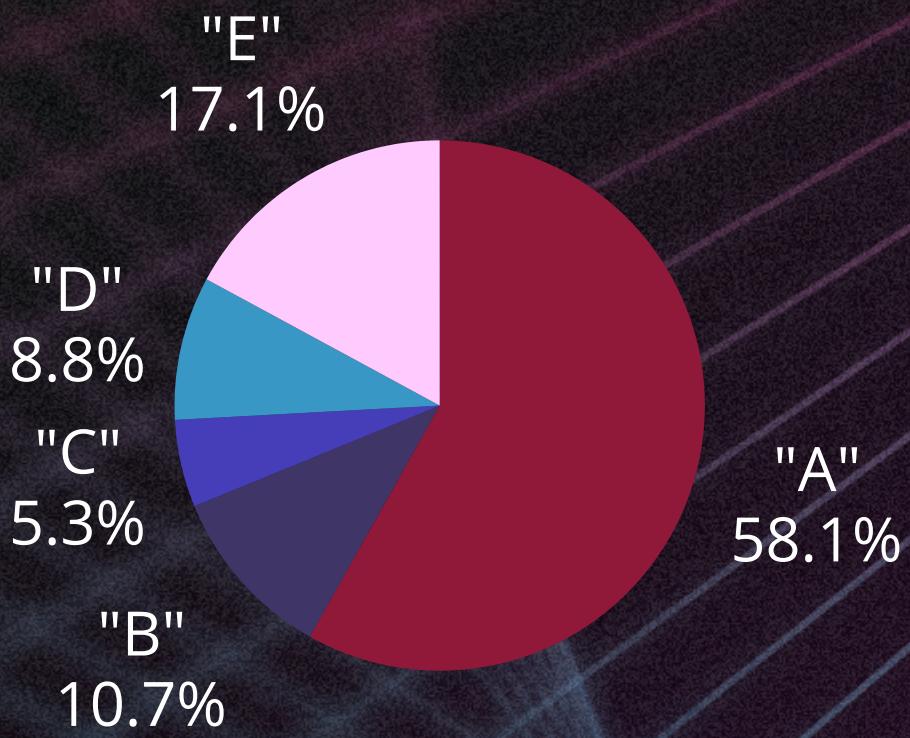
TensorBoard

TASK 3: MODEL EVALUATION

Using TensorBoard we can provide graphs illustrating our accuracy improvement as we apply our epochs

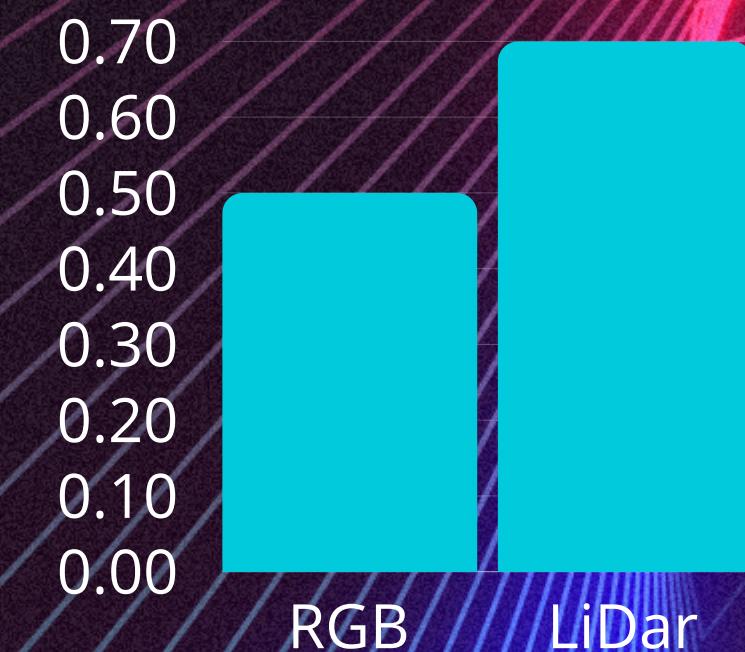
EVALUATING

*all hypothetical



PREDICTED LABELS

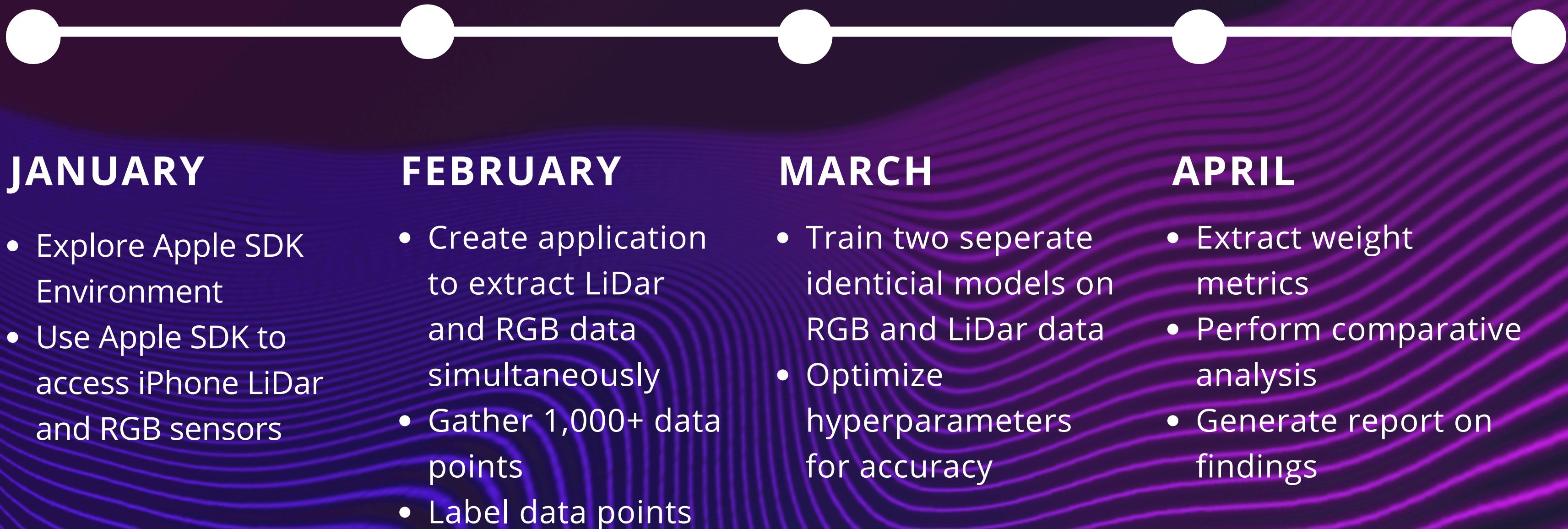
Compare the labels from the RGB model and the LiDar model



COMMON METRICS

Compare common metrics such as recall, accuracy, etc

TIMELINE



THANK YOU
FOR YOUR ATTENTION