

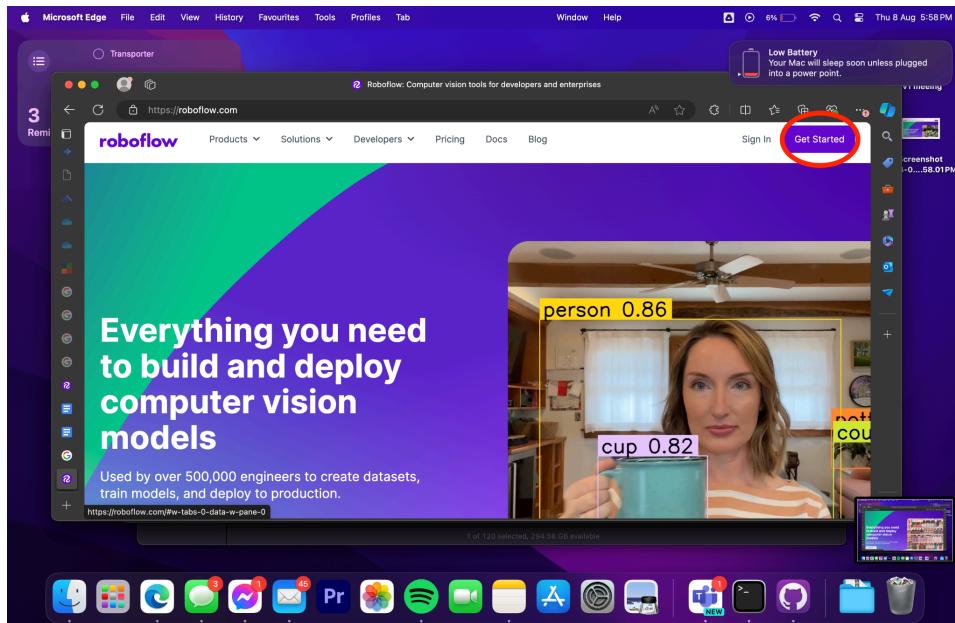
Data Augmentation with Roboflow

This document will show how to augment images you have already collected. This includes rotating / flipping the images, changing the hue and saturation, blurring the image, etc. there are many different tools that can do this. I used roboflow

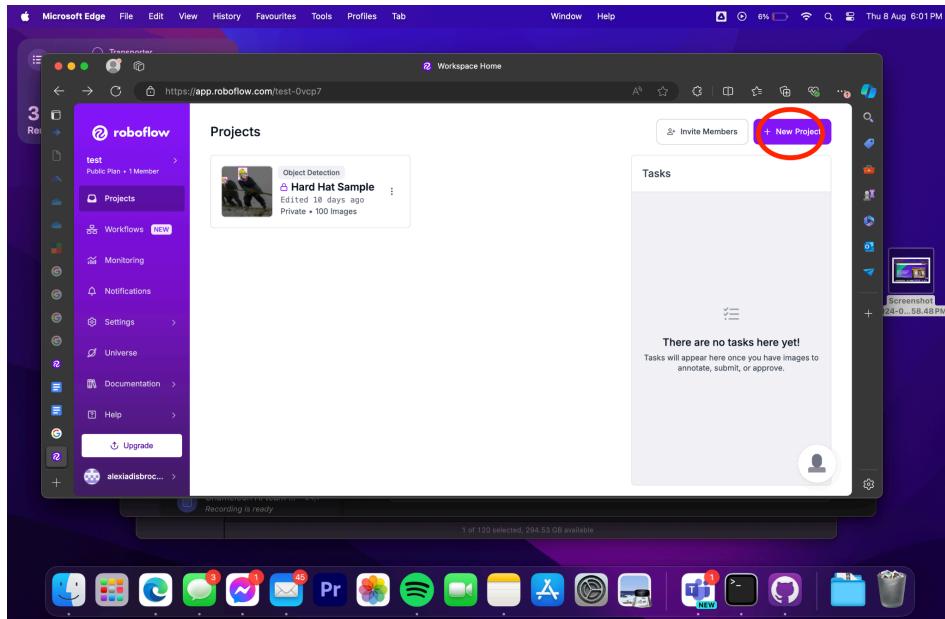
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1. **Navigate to Roboflow's Homepage:** Begin by visiting the [Roboflow homepage](https://roboflow.com). Once there, click on the "Get Started" button to initiate your project.



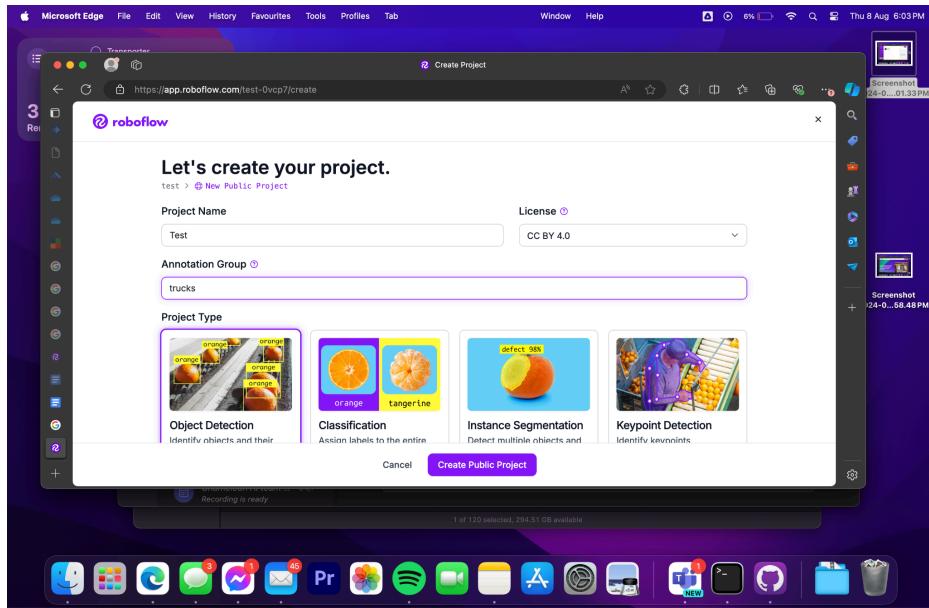
2. **Create a New Project:** After logging in or signing up, select the "New Project" option to begin creating your project.



3. **Name Your Project:** Enter a name for your project to easily identify it later.
4. **Define the Annotation Group:** Specify the object or objects you will be annotating by filling in the "Annotation Group" field.
5. **Choose Object Detection:** Select "Object Detection" as your project's type to tailor it to identifying objects within images.

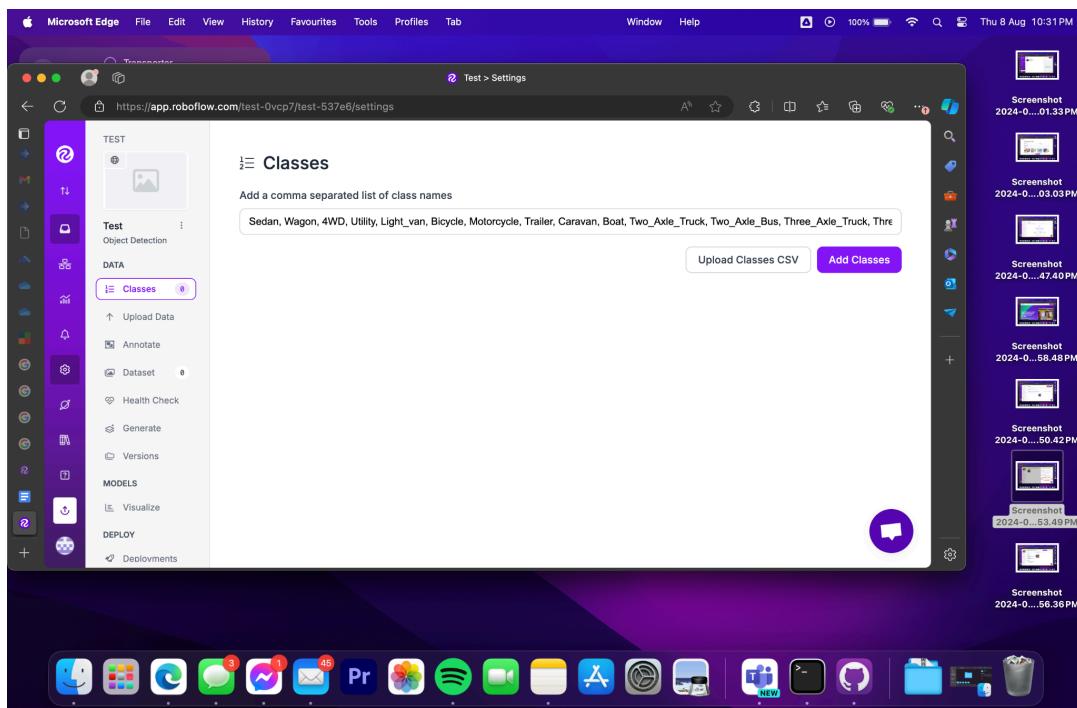
6. **Create a Public Project:** Finally, click on "Create Public Project" to finalize the setup.

Your project is now ready for data augmentation.

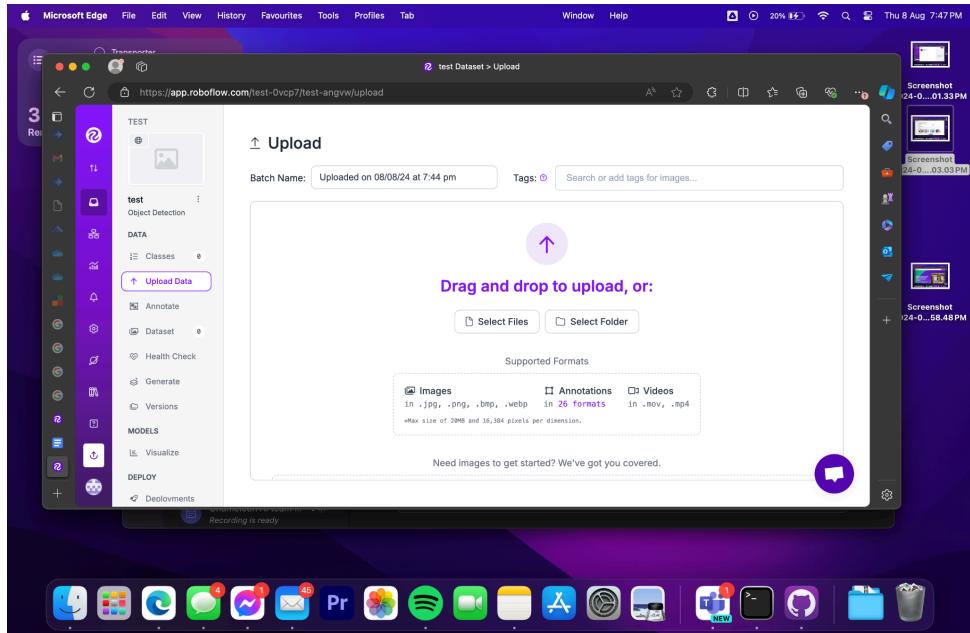


If you haven't annotated any of your images

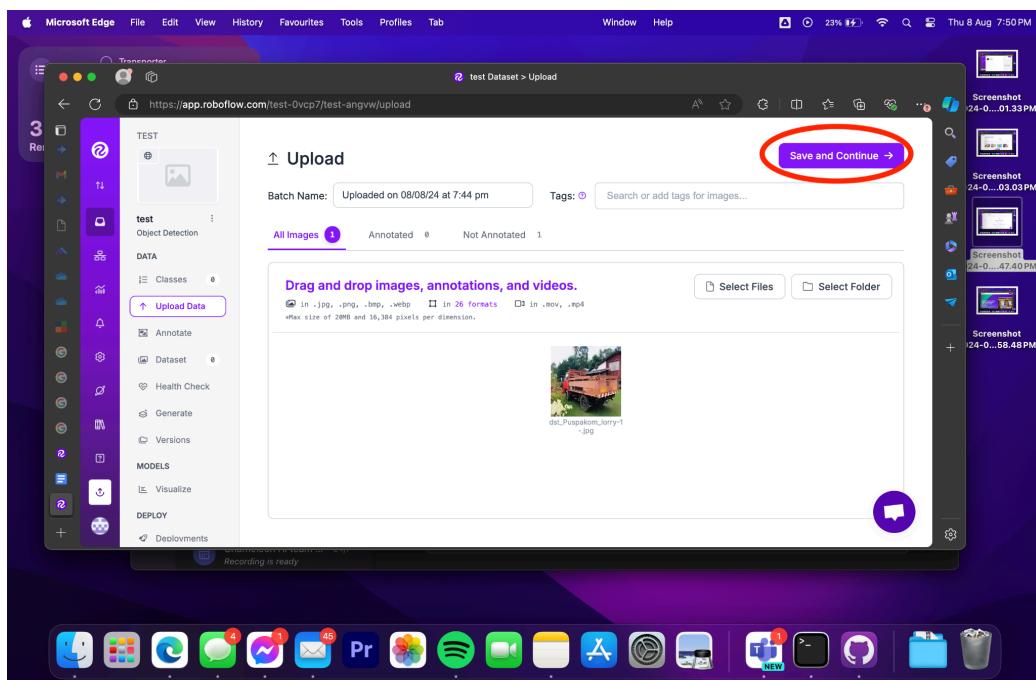
1. **Upload Label Classes:** In the "Classes" tab, upload the `labels_1.txt` file provided in your Microsoft Planner tasks. This file contains the label classes for your project.



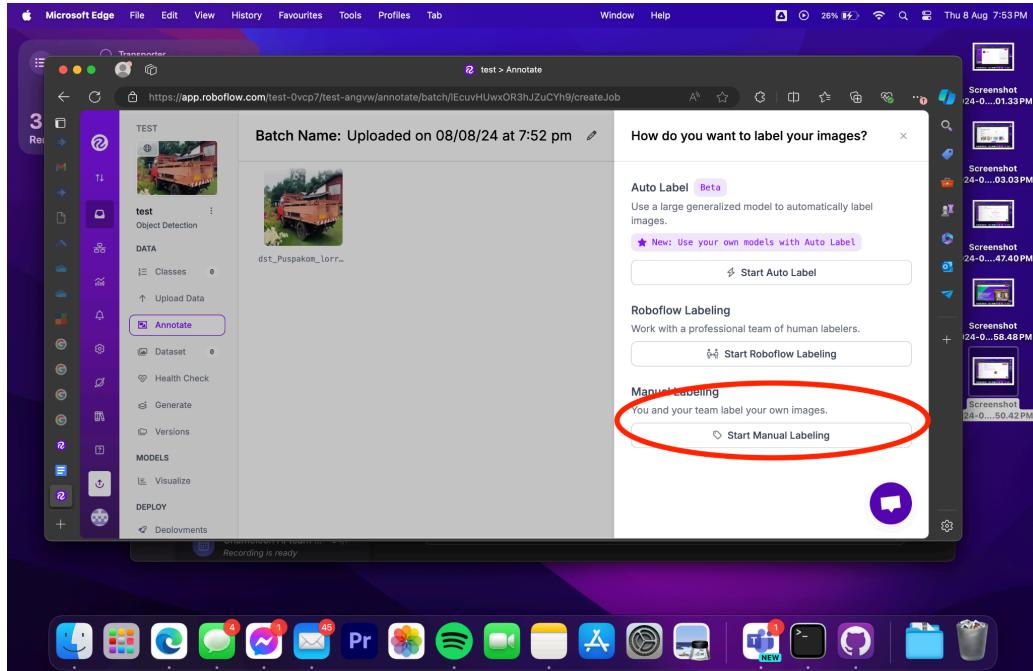
2. **Upload Images for Annotation:** If you haven't already annotated any images, navigate to the "Upload" page. Here, you can upload images either individually or as an entire folder.



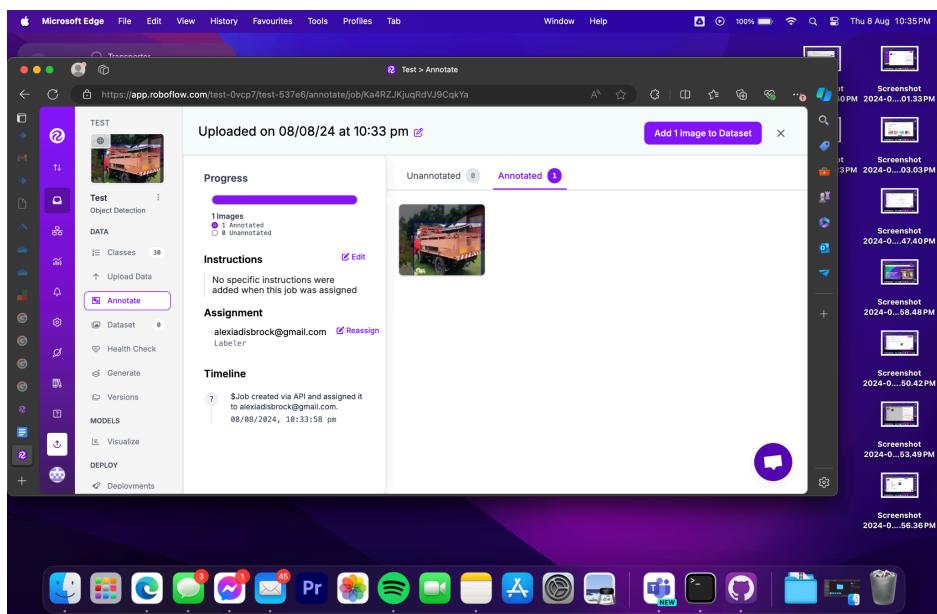
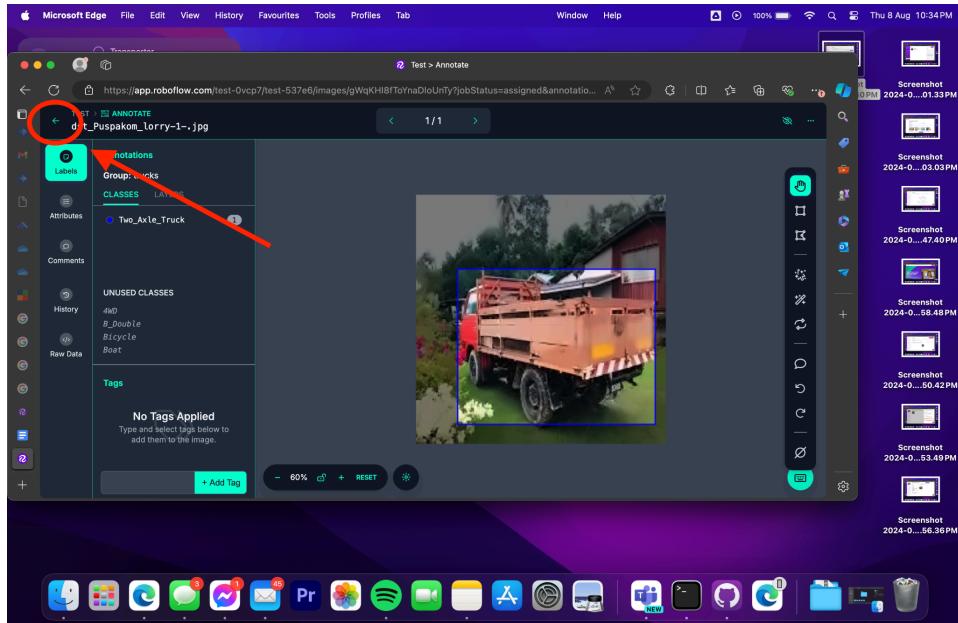
3. **Save and Continue:** Once your images are uploaded (for this example, I'll upload one), click "Save and Continue" to proceed.



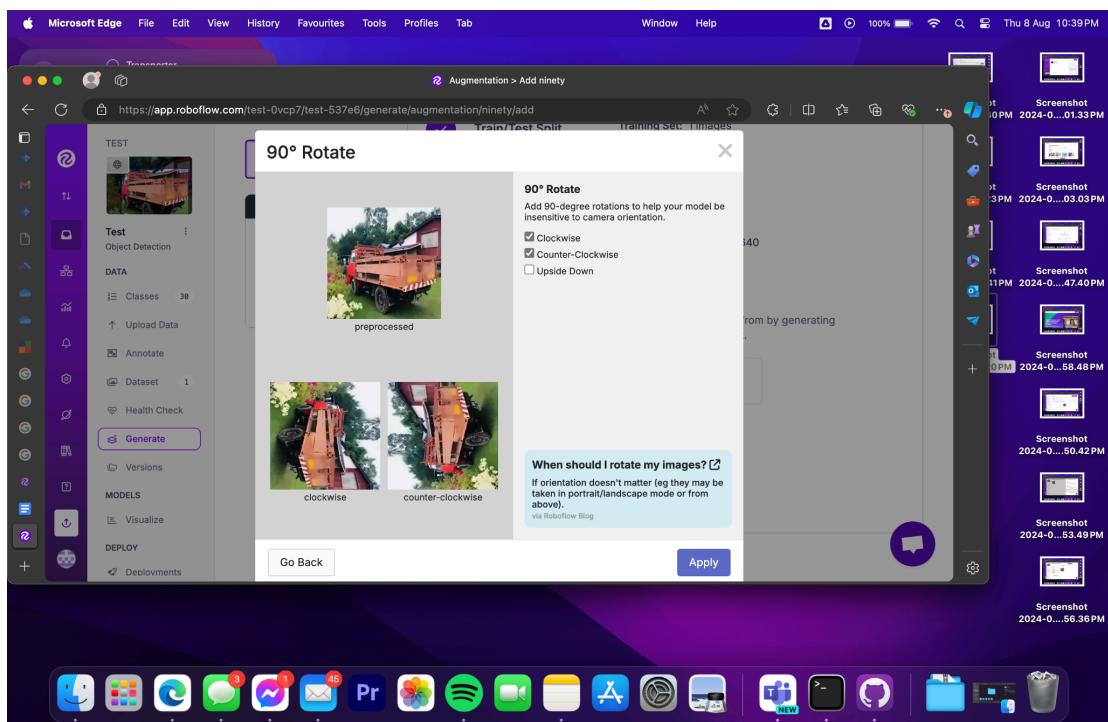
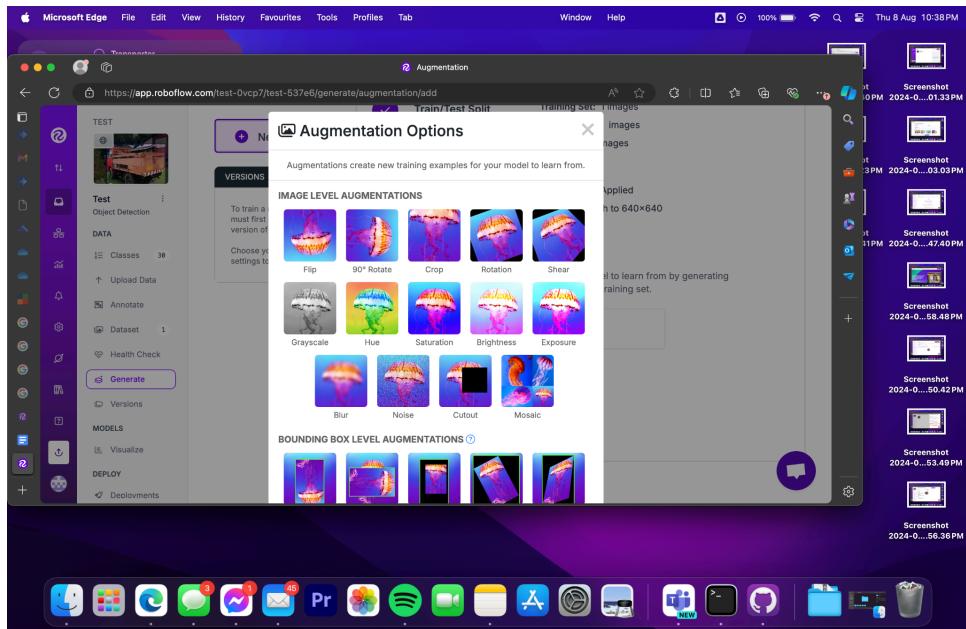
4. **Start Manual Labeling:** Click on "Start Manual Labeling" to begin manually annotating your images. On the following page, assign the images to yourself for annotation.



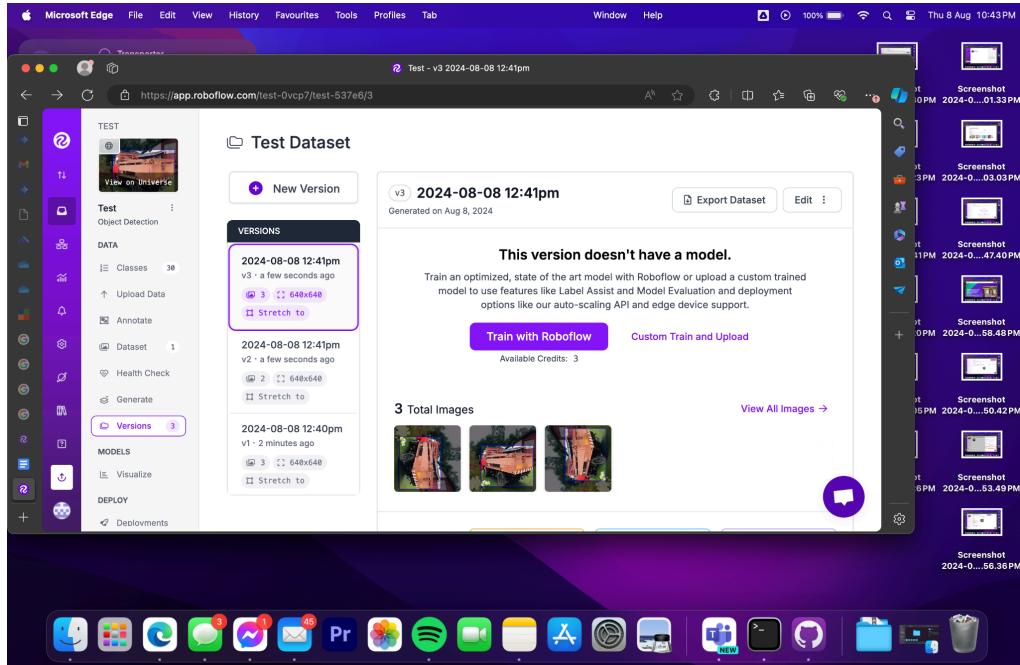
5. **Add Images to Dataset:** After completing your annotations, return to the previous page and click "Add Image to Dataset" to include the annotated images in your project.



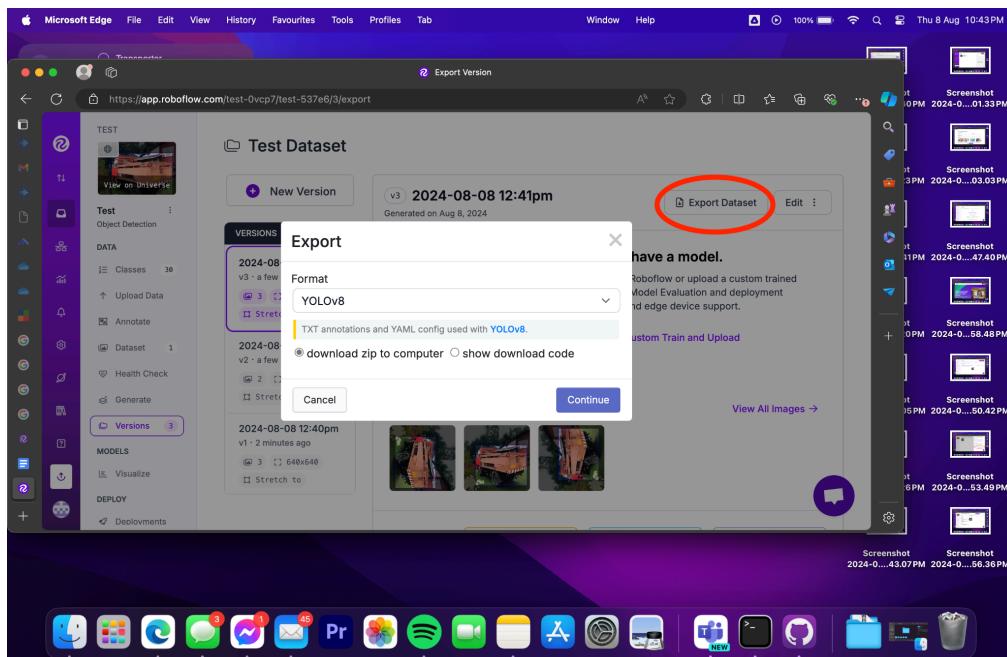
6. Generate Augmented Images: Go to the "Versions" tab, then select "Generate New Version" followed by "Augmentation." Here, you can choose the types of data augmentation you wish to apply. For this example, I'll use a 90-degree rotation.



7. Apply and Create: After selecting your desired augmentation settings, click "Apply," then "Continue," and finally "Create" to generate the augmented images.

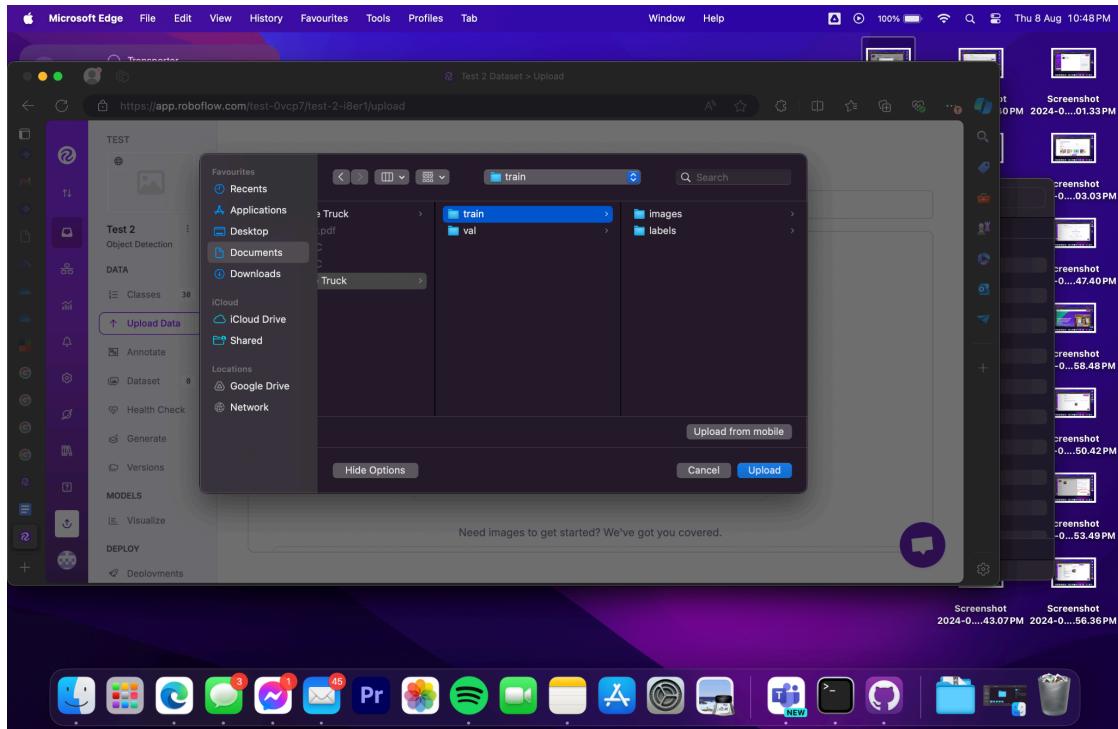


8. Export Augmented Images: The augmented images are now ready. You can export them along with their associated labels as a ZIP folder.

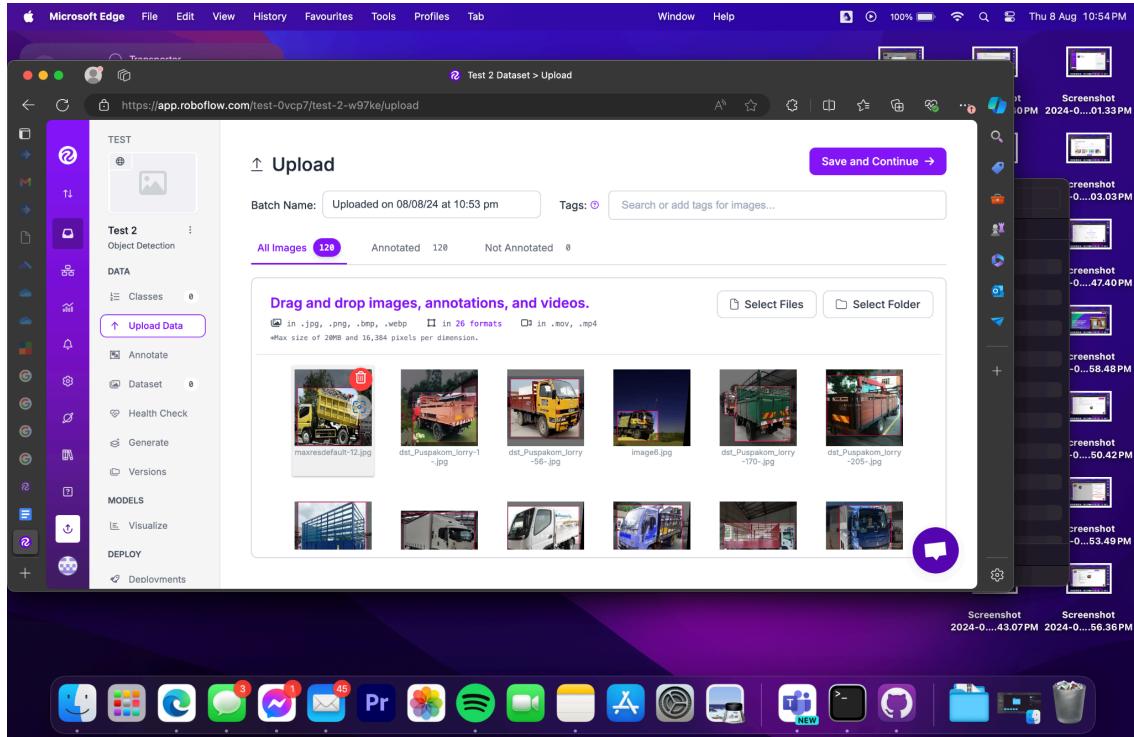


If you have annotated your images

1. **Upload Label Classes and Images:** Start by uploading the `labels 1.txt` file to the "Upload" page. Next, upload the folder containing both your images and corresponding labels to the same page.

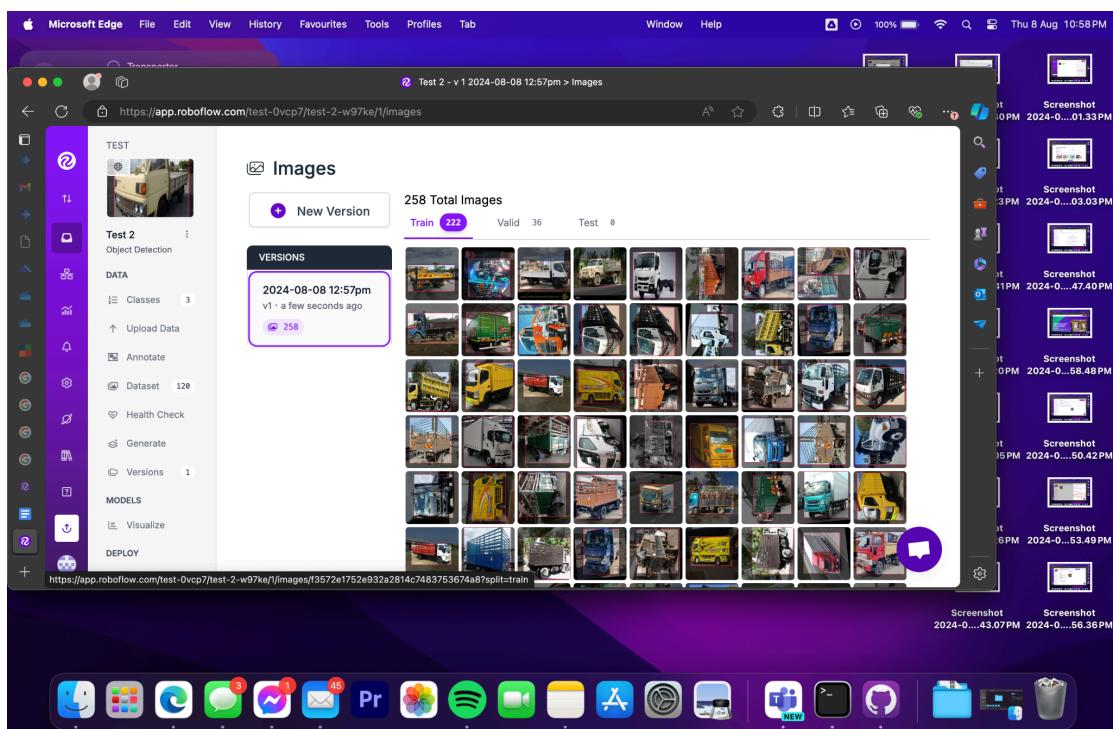
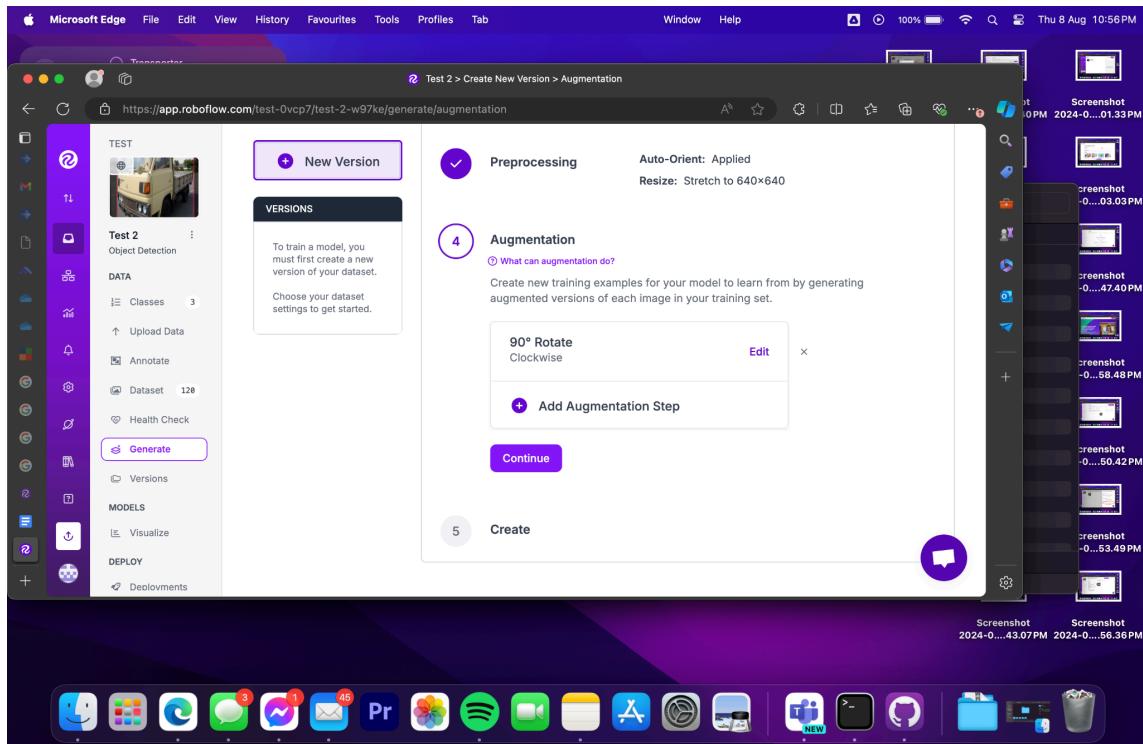


2. **Verify Annotations:** To ensure the annotations are accurate, click on each image to review them. Make any necessary adjustments before proceeding.



3. **Save and Continue:** Once satisfied with the annotations, click "Save and Continue" to move forward.
4. **Configure Data Augmentation:** Navigate to the "Generate" tab, where you can select your desired data augmentation settings. After configuring the settings, click "Continue"

and then "Create" to apply the augmentations.



5. Export Augmented Data

6. The augmented images are now generated. You can export the images along with their labels as a ZIP file.

