Lab6: Imaging tools (Roboflow)

XXXXXXX AI for Digital Health (2025/2)

Objective

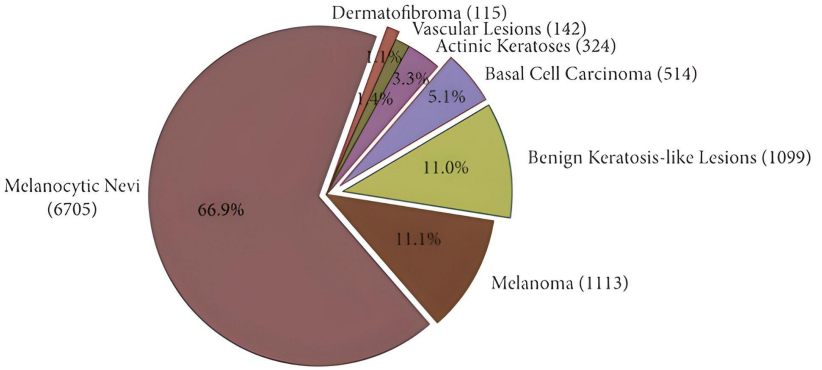
- Use the **Roboflow** to create Dataset
- Use created Dataset to train model (YOLO,UNet)

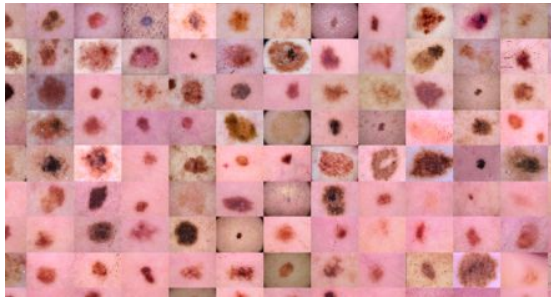
Roboflow

- Use the **Roboflow** to create Dataset
- Use created Dataset to train model (YOLO,UNet)

Dataset: Skin Cancer MNIST (HAM10000)

- The dataset consists of 10015 images with 10013 labeled objects belonging to 7 skin cancer classes.
- The data contains image in JPG format and documents in JSON format

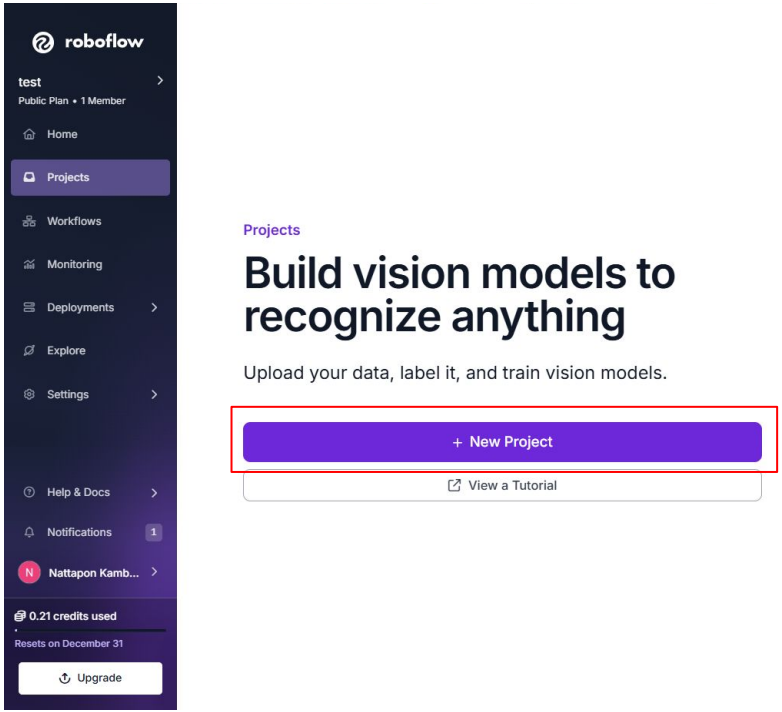


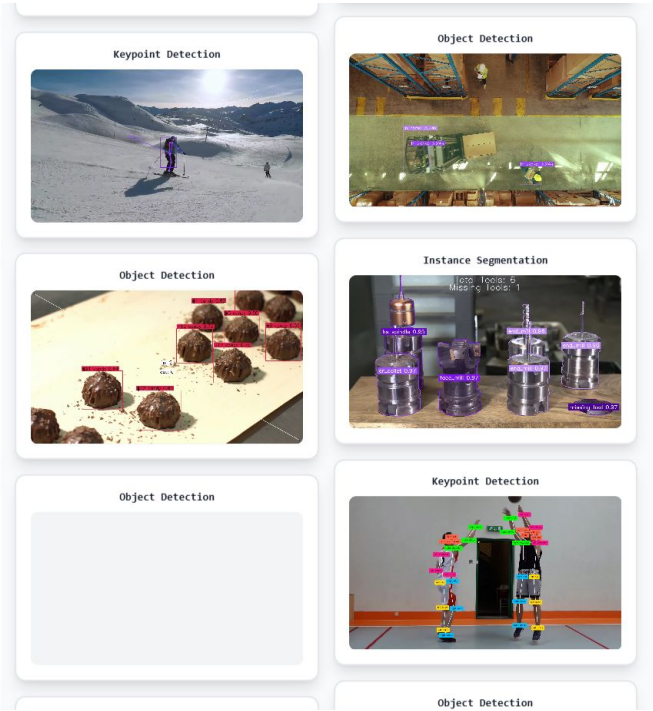


Exercise1: Object detection dataset

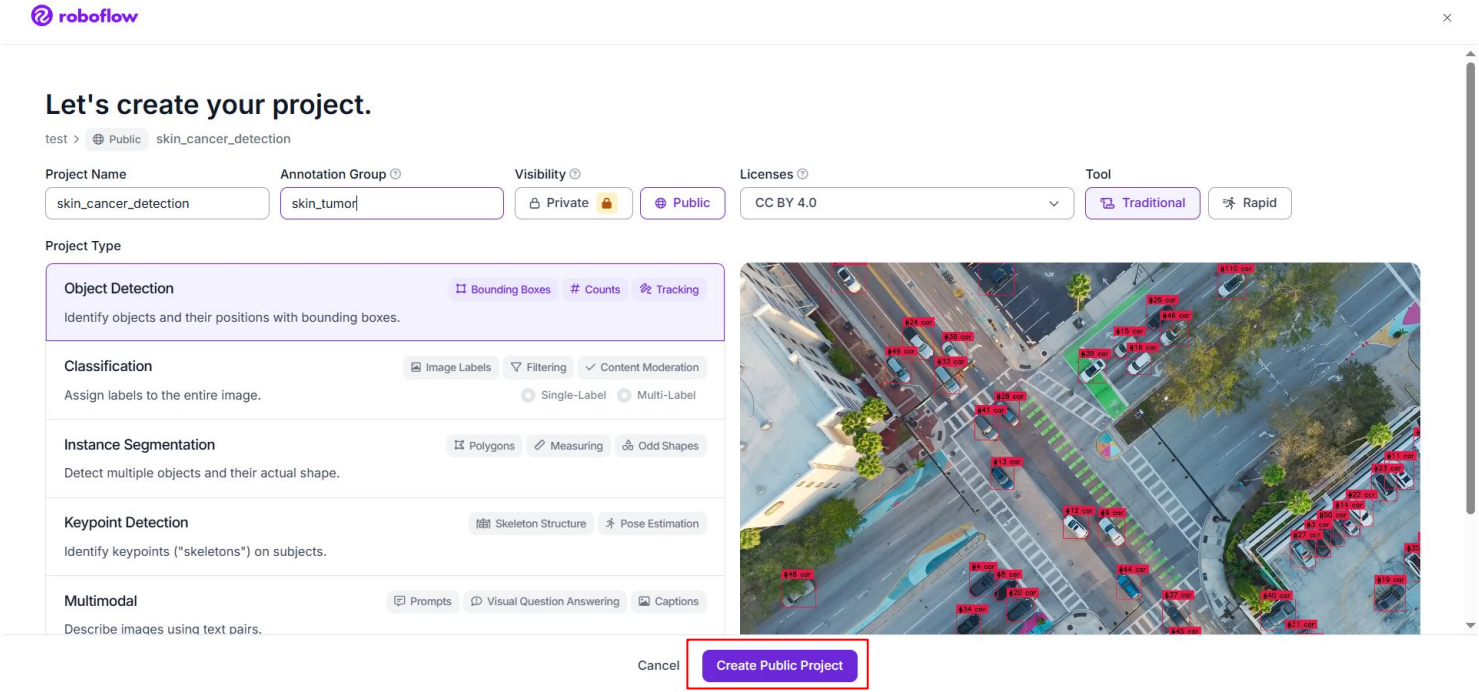
1) Load image from github
2) Create Object detection dataset in Roboflow
3) Train YOLO model in ultralytics hub
4) evaluate YOLO in Detection_Kvasir_YOLO.ipynb

Roboflow

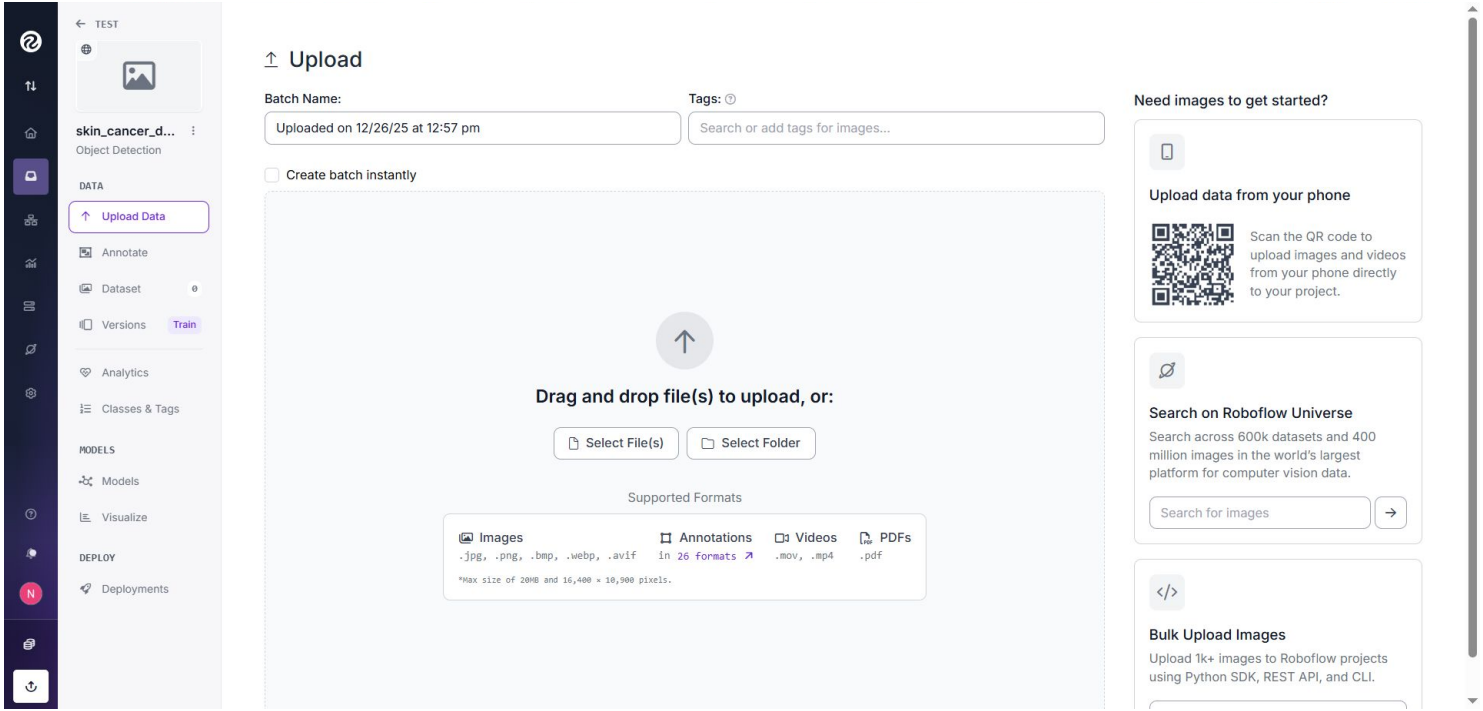

roboflow
test
Public Plan • 1 Member
Home
Projects
Workflows
Monitoring
Deployments
Explore
Settings
Help & Docs
Notifications
1
Nattapon Kamb...
0.21 credits used
Resets on December 31
Upgrade
Projects
Build vision models to recognize anything
Upload your data, label it, and train vision models.
+ New Project
View a Tutorial


Keypoint Detection
Object Detection
Object Detection
Instance Segmentation
Object Detection
Keypoint Detection
Object Detection

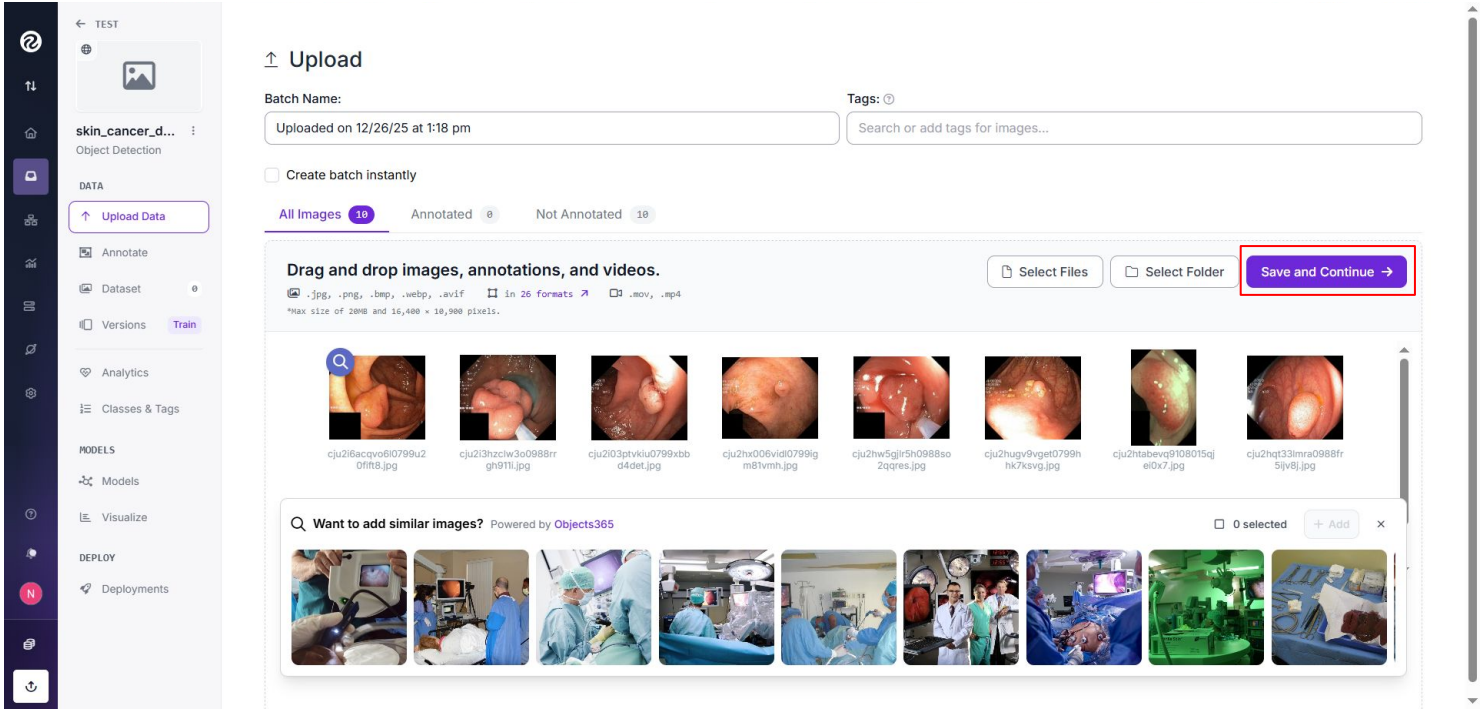
Roboflow


roboflow
Let's create your project.
test
Public
skin_cancer_detection
Project Name
skin_cancer_detection
Annotation Group
skin_tumor
Visibility
Private
Public
Licenses
CC BY 4.0
Tool
Traditional
Rapid
Project Type
Object Detection
Bounding Boxes
Counts
Tracking
Identify objects and their positions with bounding boxes.
Classification
Image Labels
Filtering
Content Moderation
Assign labels to the entire image.
Single-Label
Multi-Label
Instance Segmentation
Polygons
Measuring
Odd Shapes
Detect multiple objects and their actual shape.
Keypoint Detection
Skeleton Structure
Pose Estimation
Identify keypoints ("skeletons") on subjects.
Multimodal
Prompts
Visual Question Answering
Captions
Describe images using text pairs.
Cancel
Create Public Project

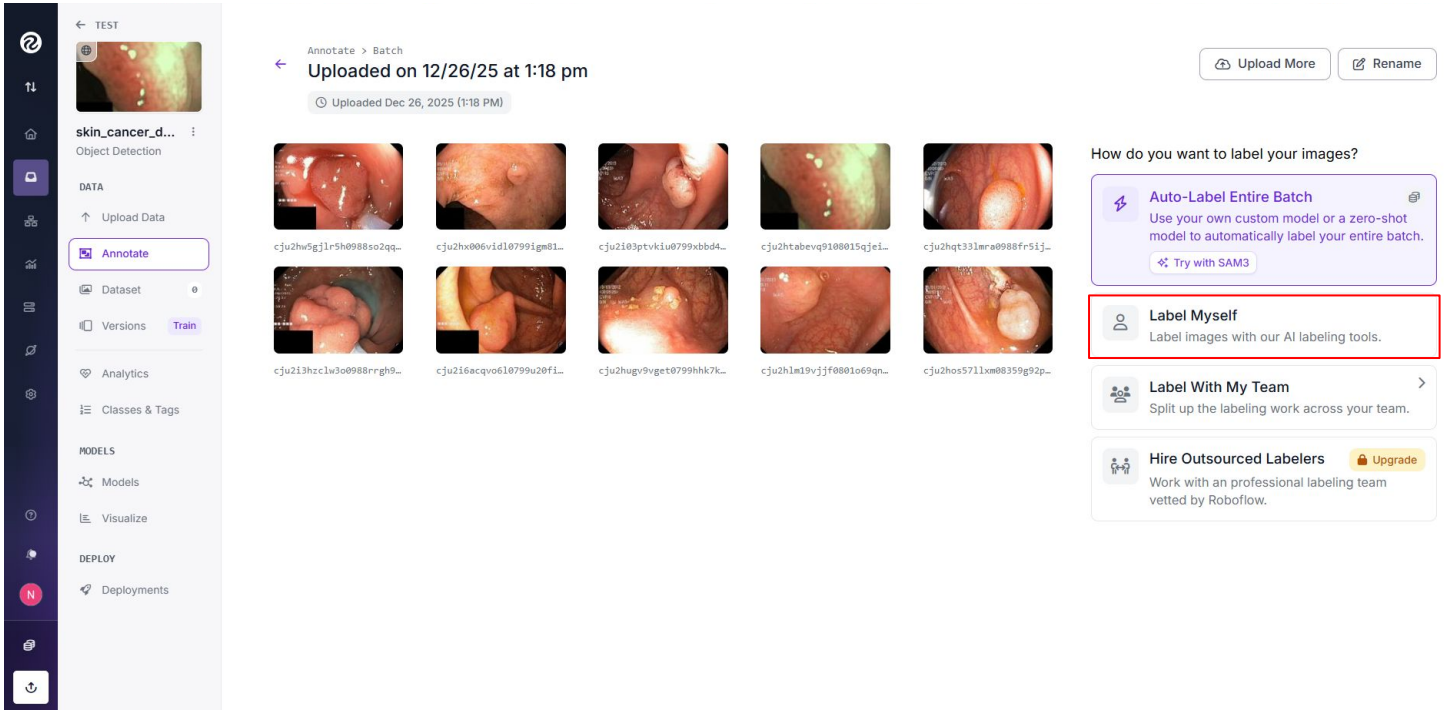
Roboflow


TEST
skin_cancer_d...
Object Detection
DATA
Upload Data
Annotate
Dataset
Versions
Train
Analytics
Classes & Tags
MODELS
Models
Visualize
DEPLOY
Deployments
Upload
Batch Name:
Uploaded on 12/26/25 at 12:57 pm
Tags:
Search or add tags for images...
Create batch instantly
Drag and drop file(s) to upload, or:
Select File(s)
Select Folder
Supported Formats
Images
.jpg, .png, .bmp, .webp, .avif
Annotations
in 26 formats
Videos
.mov, .mp4
PDFs
.pdf
*Max size of 20MB and 16,400 × 10,900 pixels.
Need images to get started?
Upload data from your phone
Scan the QR code to upload images and videos from your phone directly to your project.
Search on Roboflow Universe
Search across 600k datasets and 400 million images in the world's largest platform for computer vision data.
Search for images
Bulk Upload Images
Upload 1k+ images to Roboflow projects using Python SDK, REST API, and CLI.

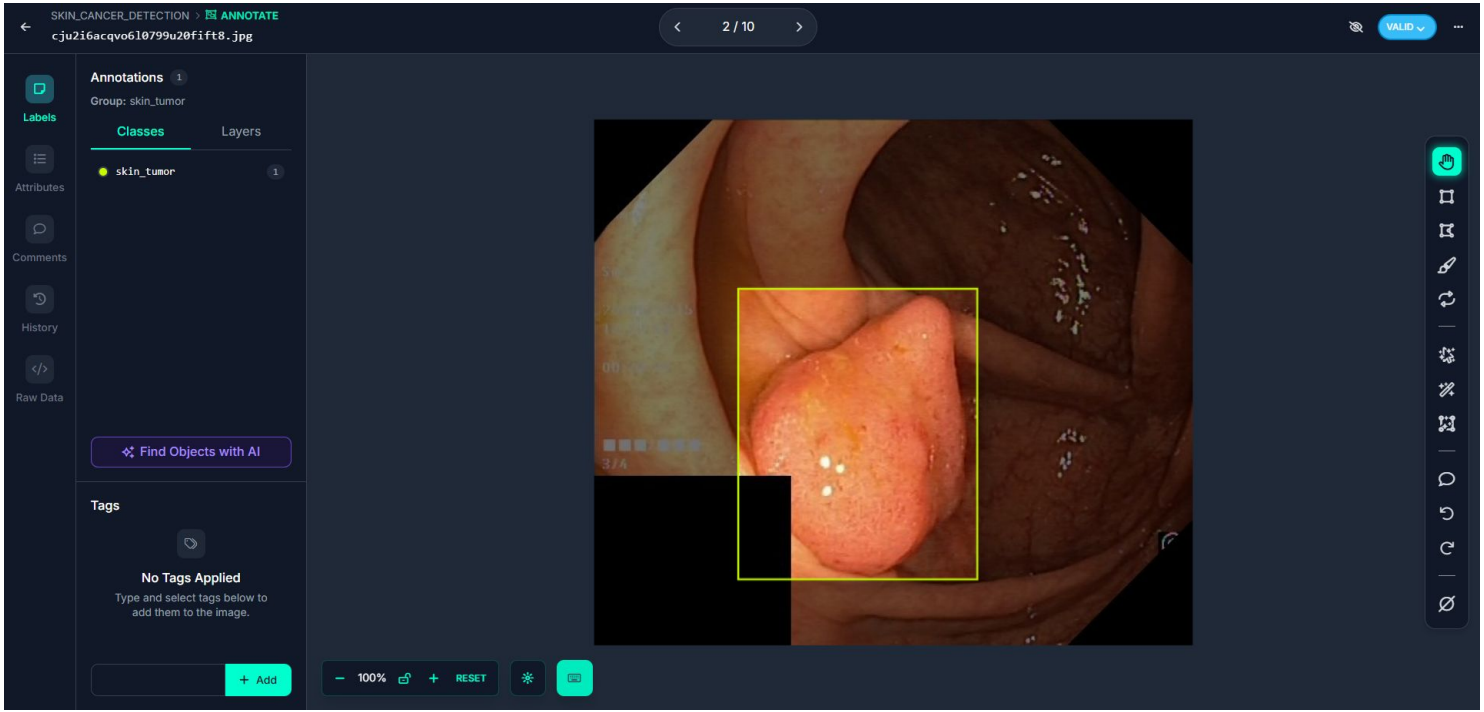
Roboflow


TEST
skin_cancer_d...
Object Detection
DATA
Upload Data
Annotate
Dataset
Versions
Train
Analytics
Classes & Tags
MODELS
Models
Visualize
DEPLOY
Deployments
Upload
Batch Name:
Uploaded on 12/26/25 at 1:18 pm
Tags:
Search or add tags for images...
Create batch instantly
All Images 10
Annotated 0
Not Annotated 10
Drag and drop images, annotations, and videos.
.jpg, .png, .bmp, .webp, .avif
in 26 formats
.mov, .mp4
*Max size of 20MB and 16,400 × 10,900 pixels.
Select Files
Select Folder
Save and Continue
Want to add similar images?
Powered by Objects365
0 selected
Add

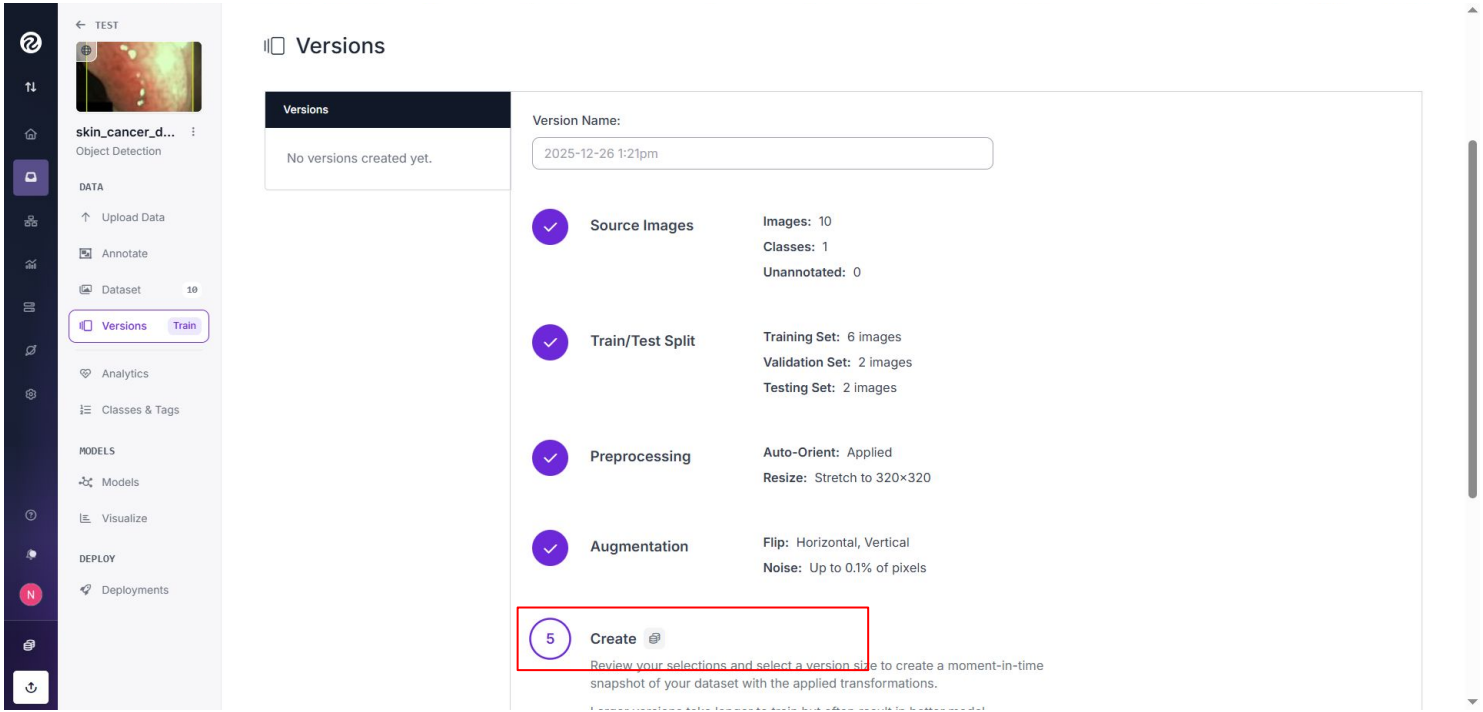
Roboflow


TEST
skin_cancer_d...
Object Detection
DATA
Upload Data
Annotate
Dataset
Versions
Train
Analytics
Classes & Tags
MODELS
Models
Visualize
DEPLOY
Deployments
Annotate > Batch
Uploaded on 12/26/25 at 1:18 pm
Uploaded Dec 26, 2025 (1:18 PM)
Upload More
Rename
How do you want to label your images?
Auto-Label Entire Batch
Use your own custom model or a zero-shot model to automatically label your entire batch.
Try with SAM3
Label Myself
Label images with our AI labeling tools.
Label With My Team
Split up the labeling work across your team.
Hire Outsourced Labelers
Upgrade
Work with an professional labeling team vetted by Roboflow.

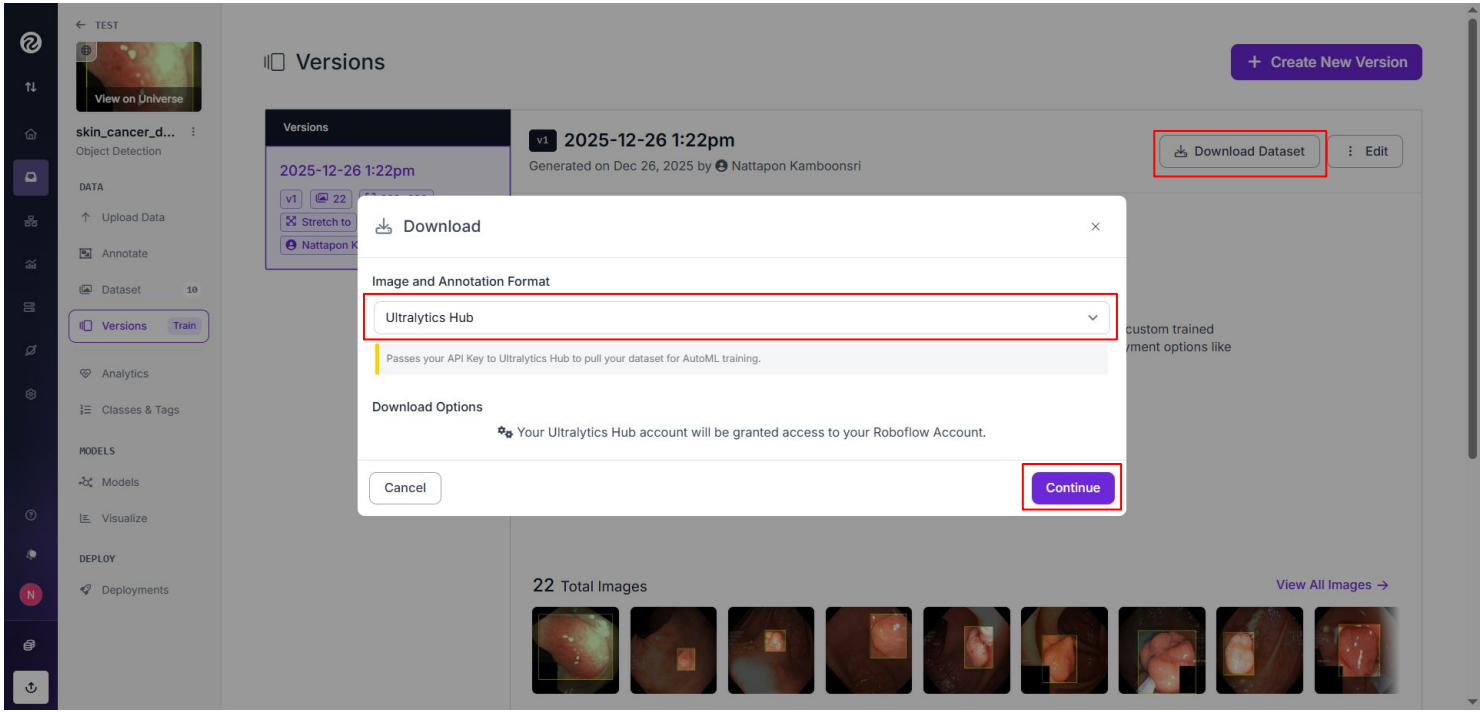
Roboflow


SKIN_CANCER_DETECTION
ANNOTATE
cju2i6acqvo6l0799u20fift8.jpg
2 / 10
VALID
Labels
Attributes
Comments
History
Raw Data
Annotations 1
Group: skin_tumor
Classes
Layers
skin_tumor 1
Find Objects with AI
Tags
No Tags Applied
Type and select tags below to add them to the image.
+ Add
100%
RESET

Roboflow


TEST
skin_cancer_d...
Object Detection
DATA
Upload Data
Annotate
Dataset 10
Versions Train
Analytics
Classes & Tags
MODELS
Models
Visualize
DEPLOY
Deployments
Versions
Versions
No versions created yet.
Version Name:
2025-12-26 1:21pm
Source Images
Images: 10
Classes: 1
Unannotated: 0
Train/Test Split
Training Set: 6 images
Validation Set: 2 images
Testing Set: 2 images
Preprocessing
Auto-Orient: Applied
Resize: Stretch to 320×320
Augmentation
Flip: Horizontal, Vertical
Noise: Up to 0.1% of pixels
5
Create
Review your selections and select a version size to create a moment-in-time snapshot of your dataset with the applied transformations.

Roboflow


TEST
View on Universe
skin_cancer_d...
Object Detection
DATA
Upload Data
Annotate
Dataset 10
Versions Train
Analytics
Classes & Tags
MODELS
Models
Visualize
DEPLOY
Deployments
Versions
+ Create New Version
Versions
2025-12-26 1:22pm
v1 22
Stretch to
Nattapon K
v1 2025-12-26 1:22pm
Generated on Dec 26, 2025 by Nattapon Kamboonsri
Download Dataset
Edit
Download
Image and Annotation Format
Ultralytics Hub
Passes your API Key to Ultralytics Hub to pull your dataset for AutoML training.
Download Options
Your Ultralytics Hub account will be granted access to your Roboflow Account.
Cancel
Continue
custom trained
yment options like
22 Total Images
View All Images →

Exercise2: Segmentation dataset

1) Load image from github
2) Create segmentation dataset in Roboflow
3) Train&evaluate UNet in Nb 5.2