

OrbitWatch User Guide

Distributed Satellite Imagery Labeling Platform

Capstone Project – Team 11

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1. Introduction

OrbitWatch is a professional web-based platform designed for efficient, accurate, and large-scale labeling of satellite imagery. Built for scalability and ease of use, OrbitWatch serves two primary users:

- **Labellers**, who annotate satellite imagery for machine learning and analytical purposes.
- **Clients**, who create labeling tasks and manage image datasets for custom annotation projects.

The platform offers:

- A seamless labeling workflow
- A custom-built annotation tool
- Real-time progress monitoring
- AI-assisted pre-processing

2. Definitions

Term	Description
Labeller	A user who annotates or labels objects in satellite images.
Client	A user who uploads image datasets and manages labeling projects.
Labeling Tool	Interactive interface used by labellers to annotate objects.
Project	A collection of images grouped by a client for labeling.
Annotation	A labeled object within an image (e.g., a bounding box around a plane).
Bounding Box	A rectangular shape drawn to highlight an object in an image.

3. System Requirements

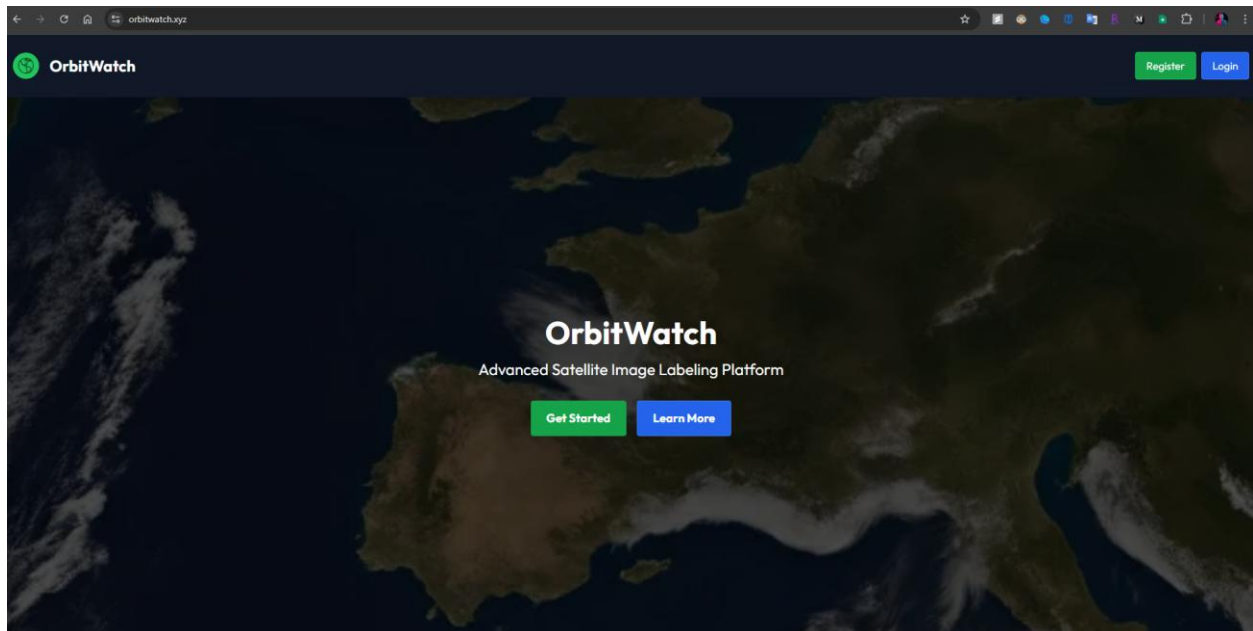
To ensure a smooth experience with OrbitWatch, the following system requirements are recommended:

- **Web Browser:** Google Chrome (preferred), Mozilla Firefox, Microsoft Edge (latest version)

- **Internet:** Stable broadband connection (5 Mbps or higher)
 - **Device:** Desktop or laptop (mouse recommended for precision labeling) or Mobile
 - **Screen Resolution:** 1280x720, optimal at 1920x1080, Standard Mobile Screen Resolution (720x1280)
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4. Accessing OrbitWatch

1. Open a supported browser.
2. Navigate to: <https://orbitwatch.xyz>



3. Use the **Register** button if you are a new user.
 4. Use the **Login** button to access your account if you are a returning user.
-

5. Creating an Account

Labeller Registration

1. On the registration page, select **Labeller**.

Create Account

Labeller Client

Email
kartiknc11@gmail.com

Password
.....

✓ At least one letter
✓ At least one digit
✓ At least one special character
✓ Minimum 8 characters

Confirm Password
.....

First Name
Kartik

Last Name
Chaudhari

Skills
Image Classification

Availability (hours per week)
25

Register as Labeller

Already have an account? [Login](#)

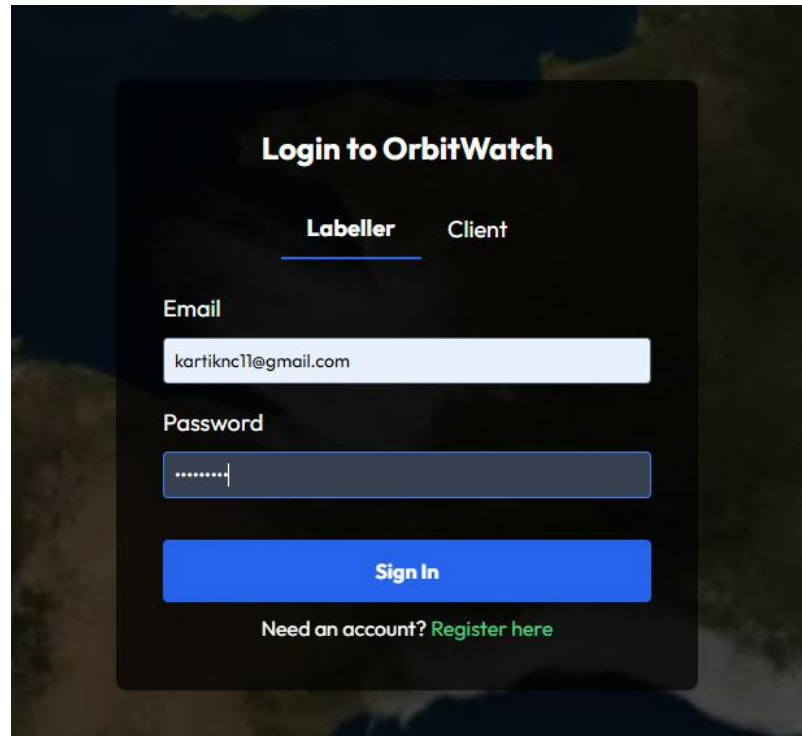
2. Provide:

- Full Name
- Email Address
- Password (with confirmation)
- Areas of Expertise (e.g., identifying airplanes, vegetation, roads)
- Availability (days/hours per week)

3. Click **Register as Labeller**.

4. You will be redirected to the Labeller Dashboard upon successful registration.

5. Returning Labellers can simply login.

A login form titled "Login to OrbitWatch" is centered on a dark background with a faint image of a satellite. The form has two tabs: "Labeller" (selected with a blue underline) and "Client". Below the tabs are two input fields: "Email" containing "kartiknc11@gmail.com" and "Password" containing a masked password ".....". A blue "Sign In" button is positioned below the password field. At the bottom, there is a link that says "Need an account? Register here" in green text.

Login to OrbitWatch

Labeller Client

Email

kartiknc11@gmail.com

Password

.....

Sign In

Need an account? [Register here](#)

Client Registration

1. Select **Client** on the registration page.

Create Account

Labeller **Client**

Email
kartiknc11@gmail.com

Password
.....

- ✓ At least one letter
- ✓ At least one digit
- ✓ At least one special character
- ✓ Minimum 8 characters

Confirm Password
.....

Company Name
Kartik

Industry
Chaudhari

Typical Project Description
Airplane Detection

Register as Client

Already have an account? [Login](#)

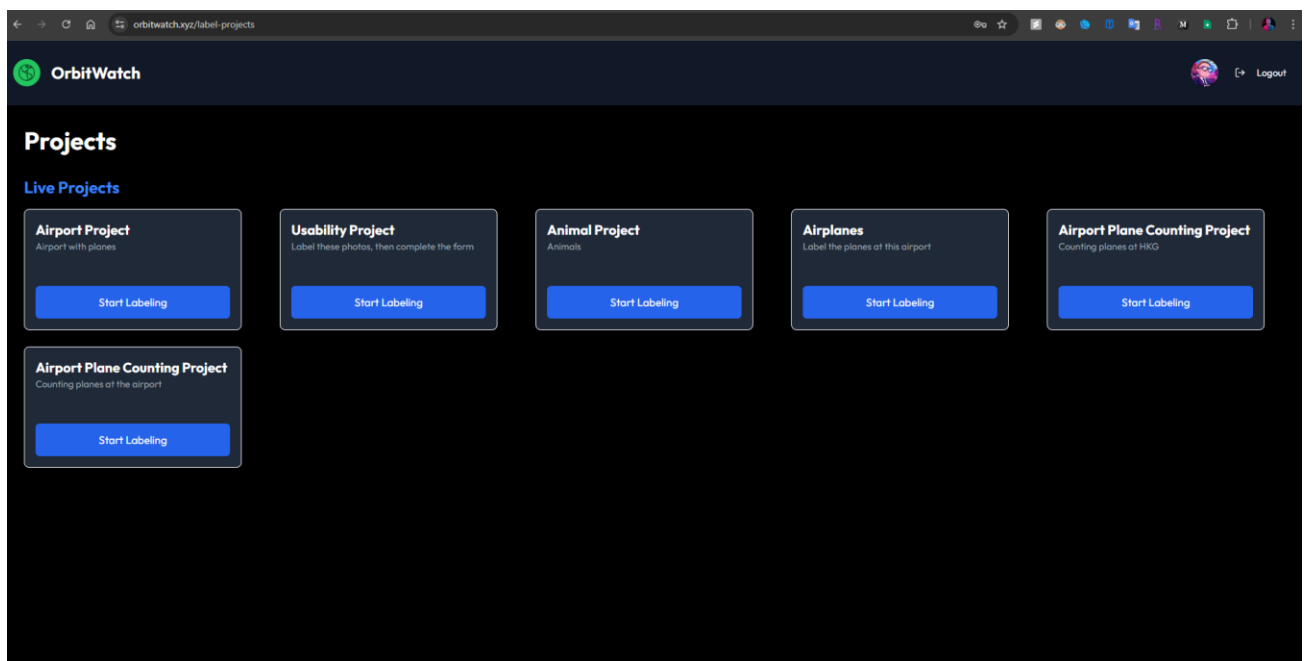
2. Provide:
 - Organization or Personal Name
 - Email Address
 - Password (with confirmation)
 - Project Interest or Objective
3. Click **Register as Client**.
4. You will be redirected to the Client Dashboard.

6. Using the Platform as a Labeller

Dashboard Overview

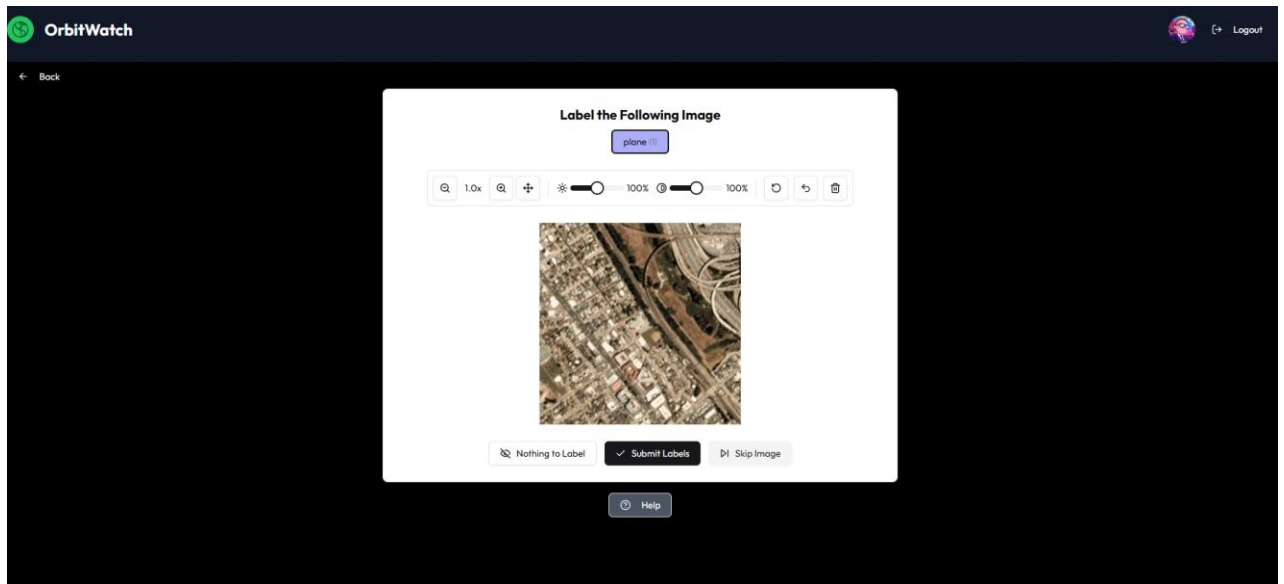
After login, labellers are presented with:

- List of available **Live Projects**
- Progress Section for any projects underway
- Project completion status
- A progress tracker showing number of images labeled
- Access to tutorials and account settings



Starting a Project

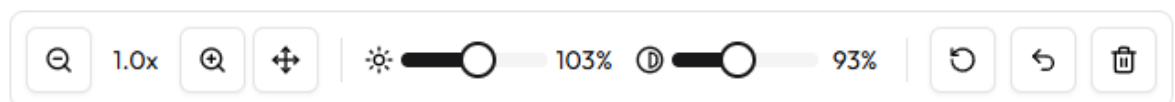
1. Select a project from the **Live Projects** list.
2. Click **Start Labelling**.
3. You will enter the labeling interface.



Using the Labeling Interface

Tools available:

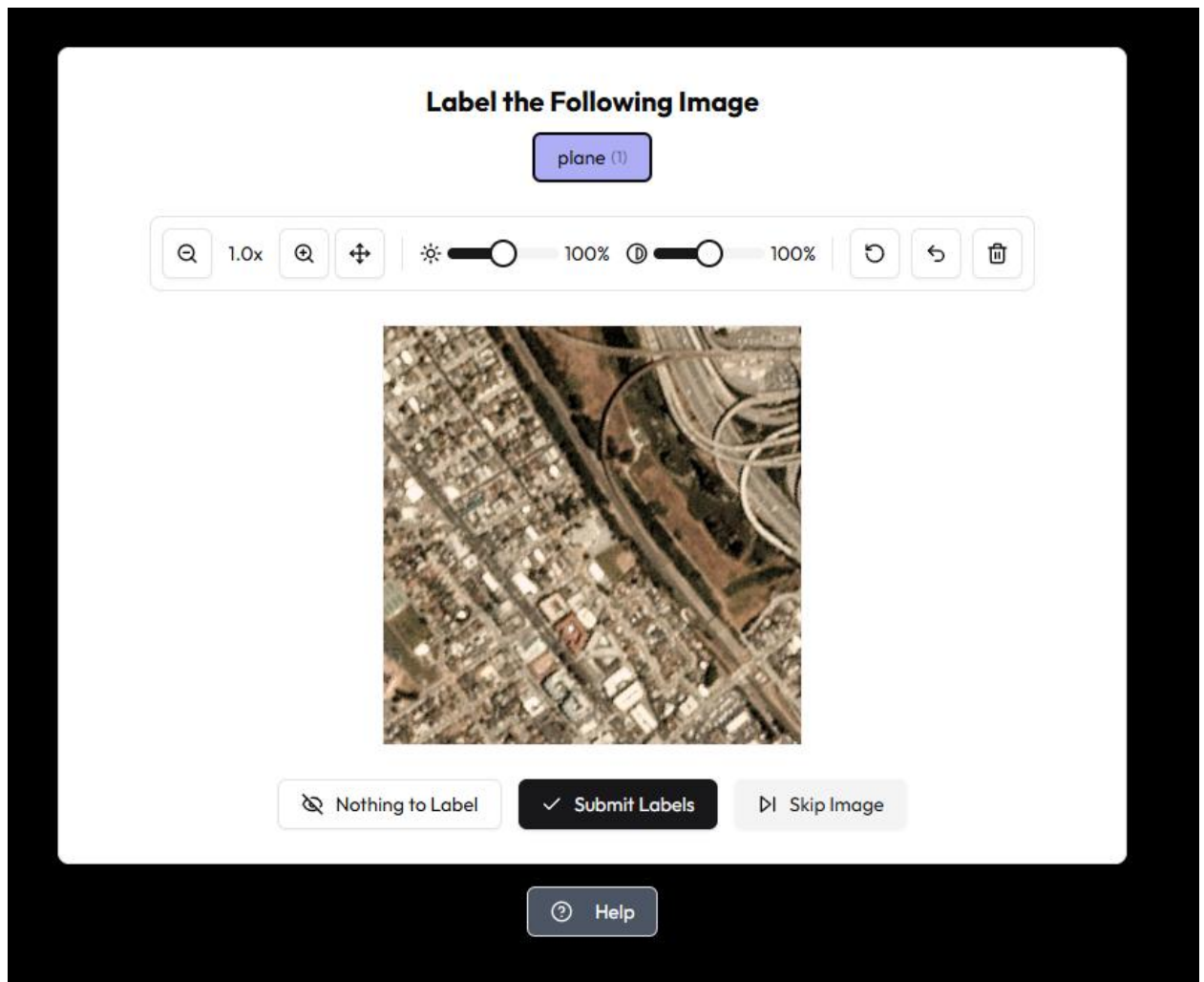
- **Zoom In/Out:** Magnify or reduce the image view.
- **Pan Tool:** Navigate across large image areas.
- **Brightness/Contrast:** Adjust for better visibility.
- **Reset View:** Revert to the original view settings.
- **Undo/Redo:** Revert last action or reapply.
- **Delete Label:** Remove selected bounding box.
- **Clear All Labels:** Delete all annotations from the image.
- **Draw Bounding Box:** Click and drag using the mouse.



Submitting, Skipping, and Completing Tasks

- When finished labeling an image, click **Submit Label**.
- If the image contains no relevant objects, select **Nothing to Label**.


- If unsure, select **Skip Image**.





Label the Following Image

plane (1)

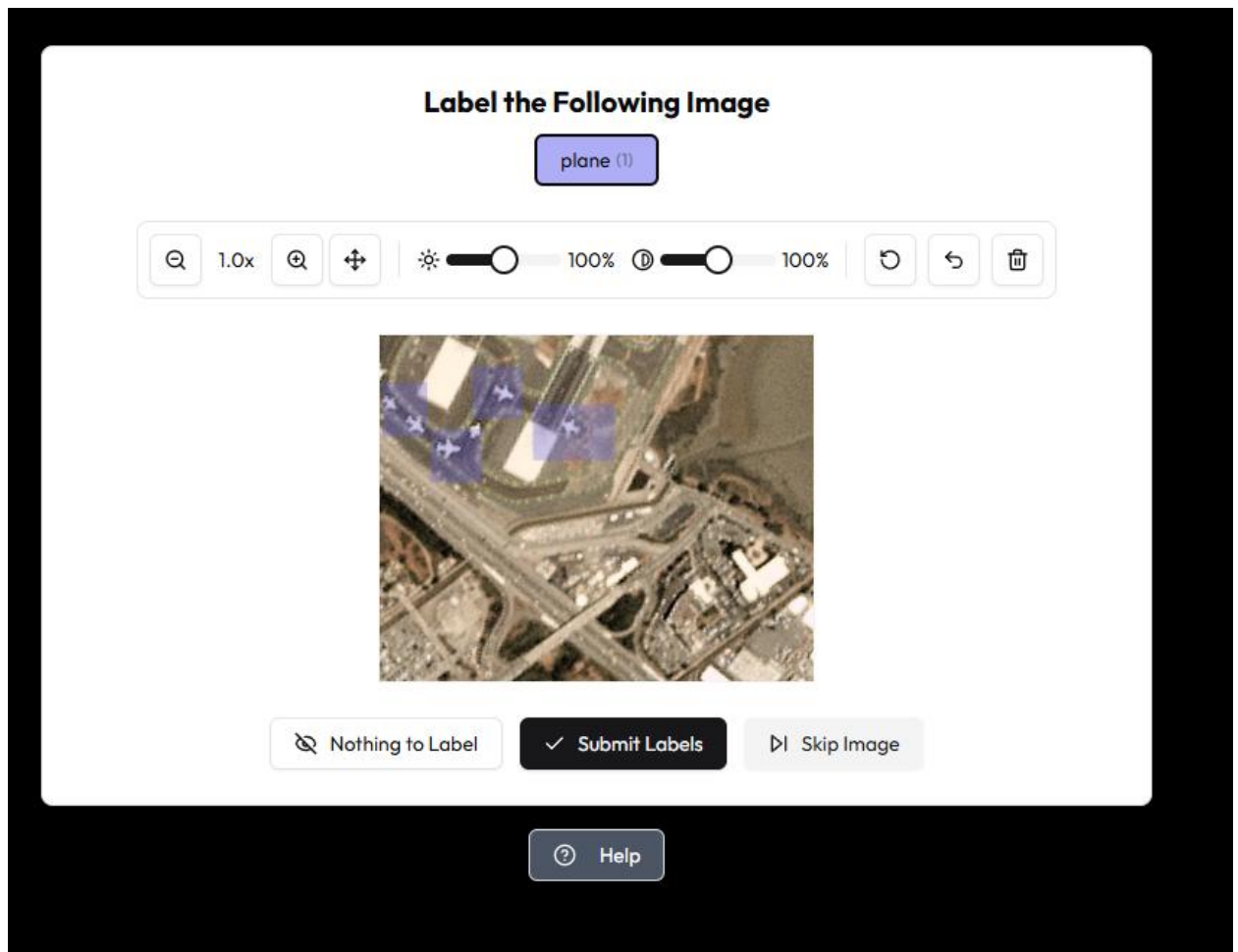


 Nothing to Label

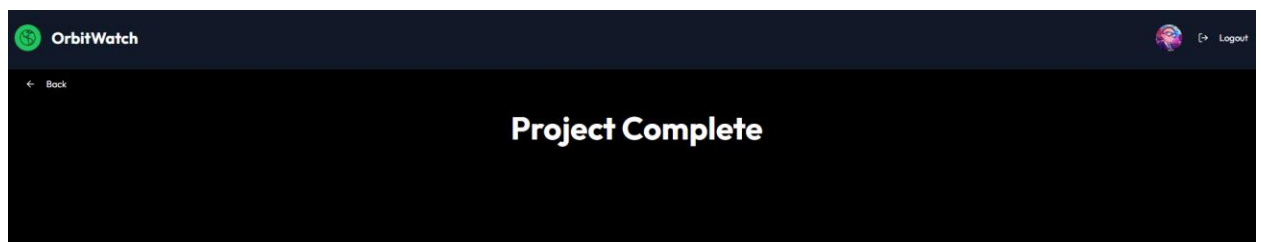
 Submit Labels

 Skip Image

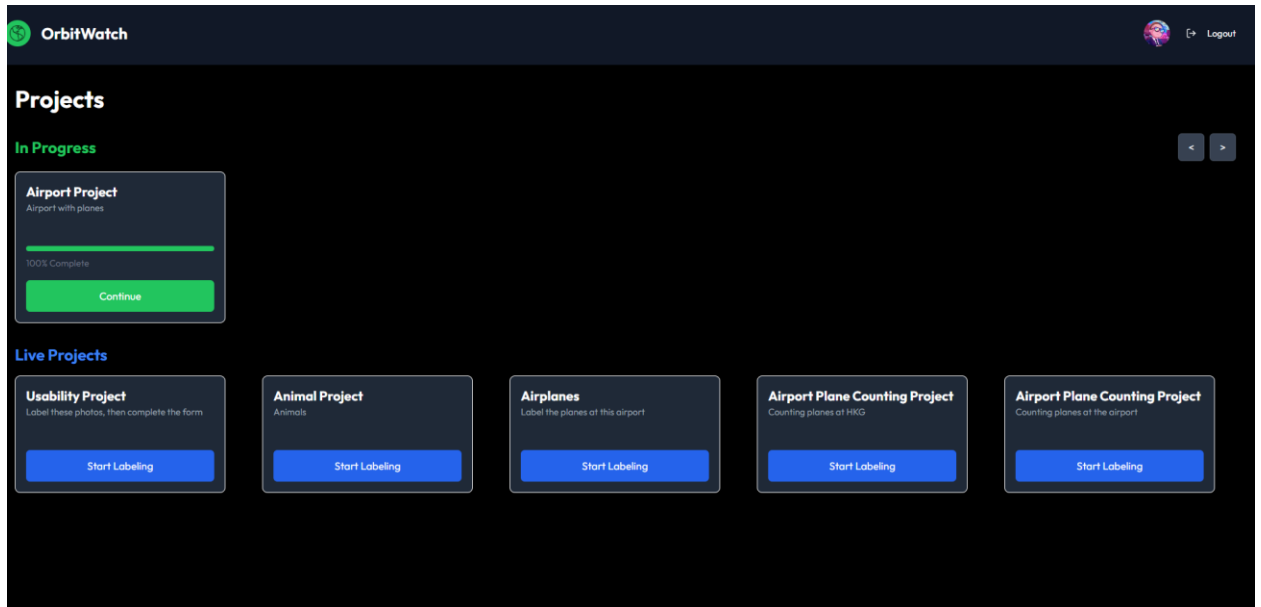
 Help



- Once all images in a project are completed, a confirmation screen appears.



- The project is marked **Complete** in your dashboard.



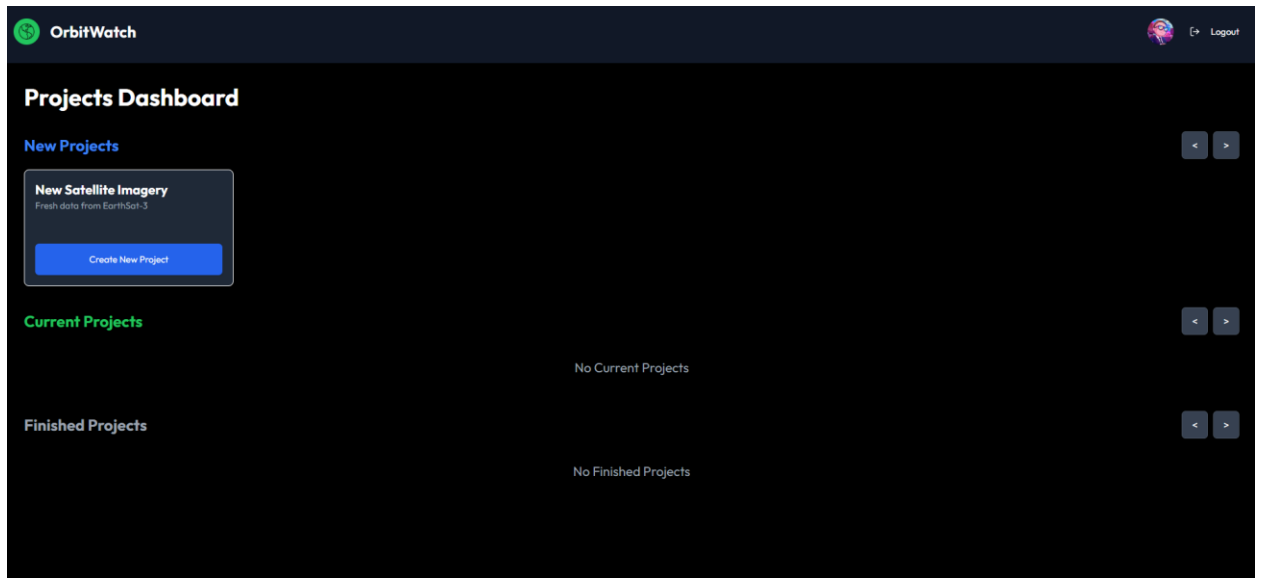
Keyboard Shortcuts

Action	Shortcut
Zoom In	+
Zoom Out	-
Reset View, Brightness & Contrast	R
Undo Last Label	Ctrl + Z
Delete Drawn Box	Delete
Submit Label	Enter
Nothing to Label	N
Skip Image	S

7. Using the Platform as a Client

Creating a New Project

1. From the **Client Dashboard**, click **Create New Project**.



2. Provide the following information:

- Project Name
- Project Description
- End Date
- Object(s) to Label (e.g., airplanes, ships, buildings)
- Estimated Budget

The image shows a 'New Project' form with the following fields and elements:

- Project Name:** A text input field containing 'Airplane Detection v3'.
- Project Description:** A text area containing 'Help me identify white airplanes in the satellite images.' with a small edit icon at the bottom right.
- End Date:** A date input field showing '05/10/2025' with a calendar icon.
- Upload Images:** A section containing a 'Choose Files' button and a file name 'wp6381561.jpg'.
- What are you looking to find in these images?:** A text area containing 'White airplanes' with a small edit icon at the bottom right.
- Total Estimated Cost:** A section showing '\$132.34' in green text, with a note below it: 'Final cost may vary based on project complexity'.
- Create Project:** A large blue button at the bottom.

Uploading Images and Setting Parameters

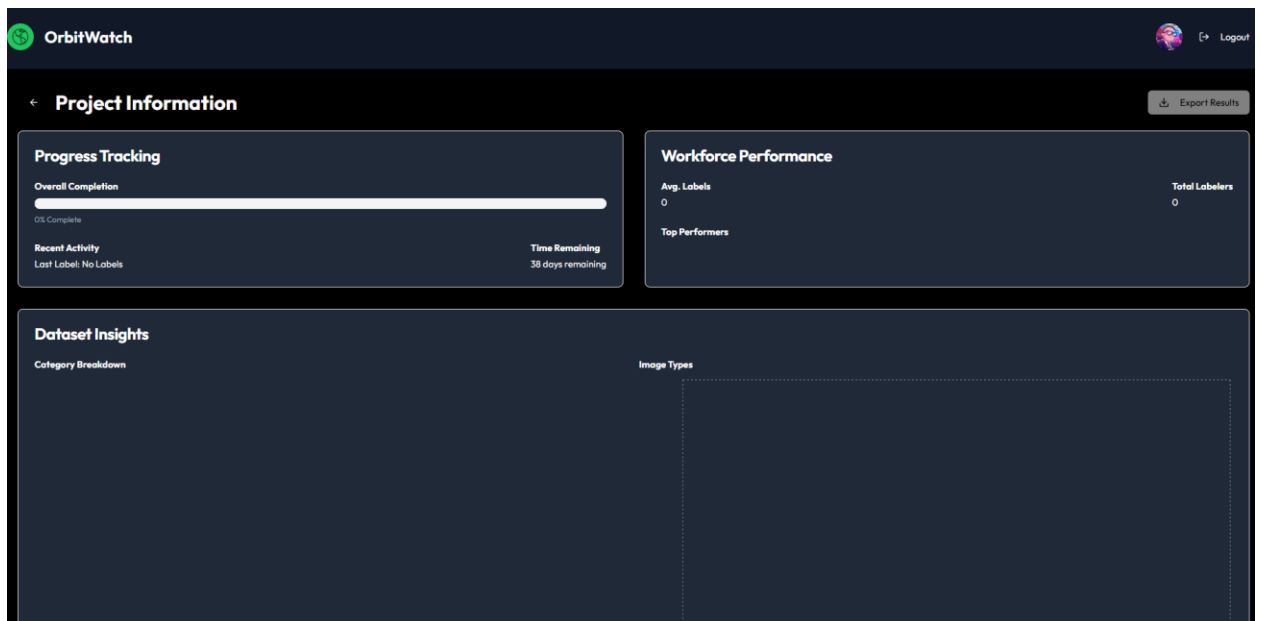
- Drag and drop images or use file upload.
- Supported formats: JPEG, PNG
- Review and confirm uploaded images.
- Click **Create Project**.



Monitoring Project Progress

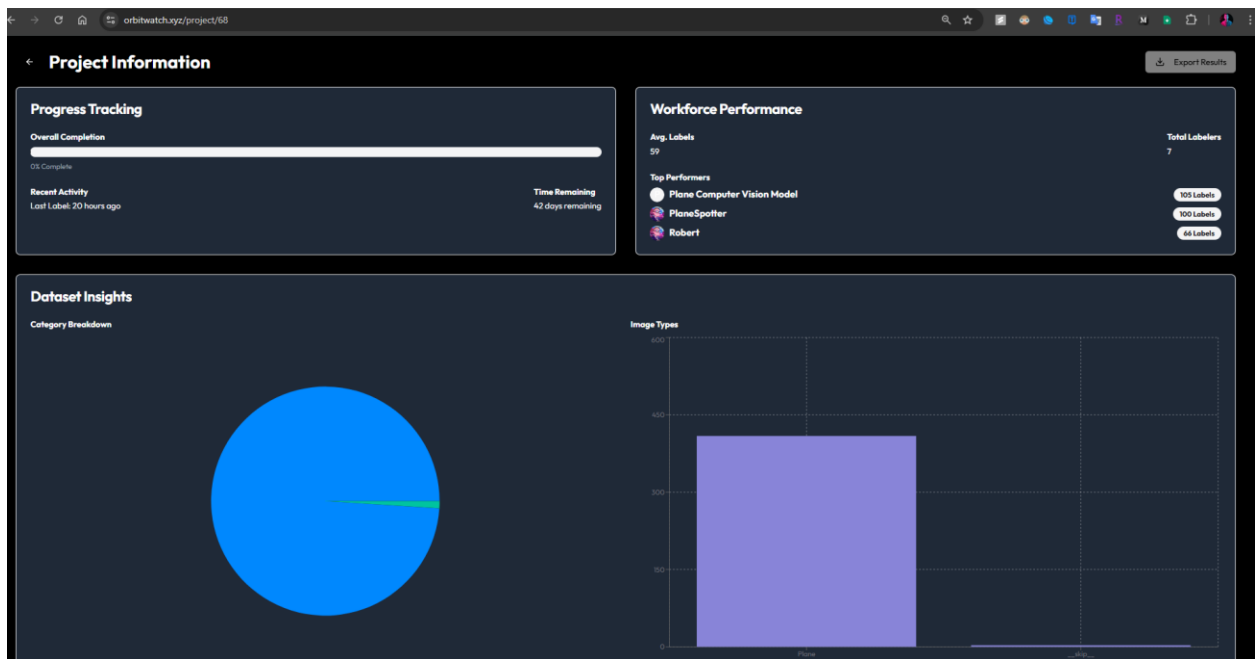
Clients can track:

- Percentage completion
- Progress Section for any projects underway
- Total images labeled
- Individual labeller contributions
- Object label frequency and image insights

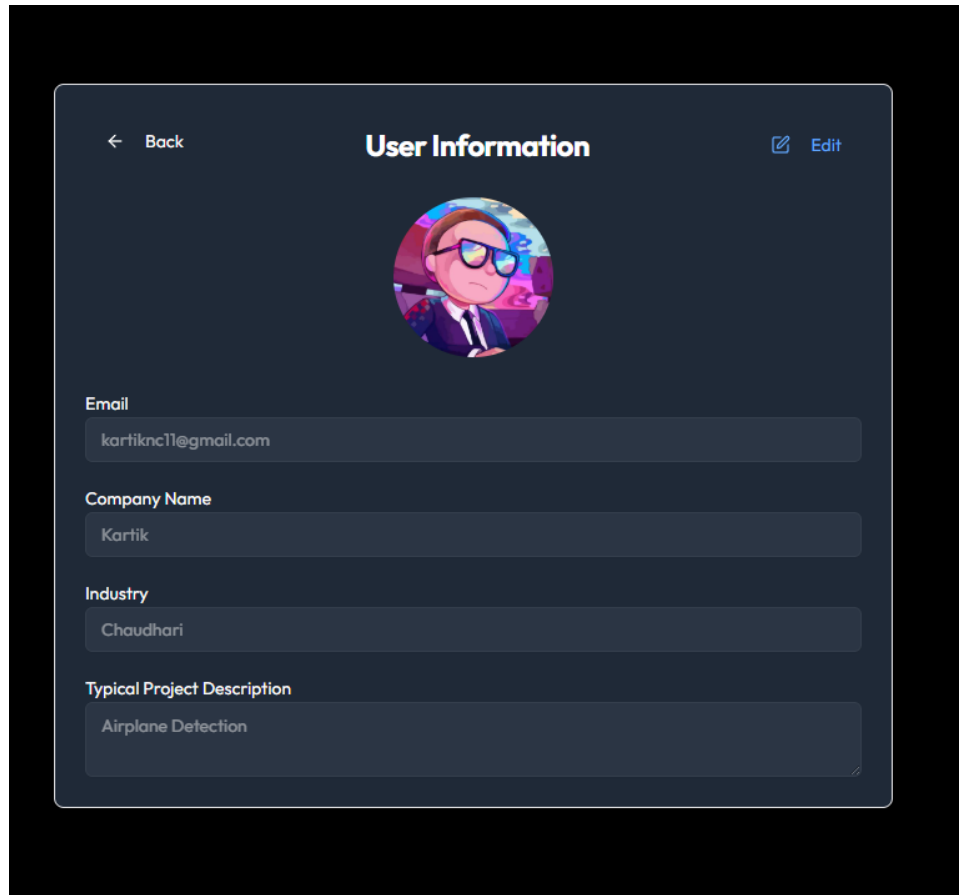


Reviewing Results

1. Click **View Project**.
2. Download labeled datasets.
3. Review individual image annotations.
4. Project status changes to **Finished** upon completion.

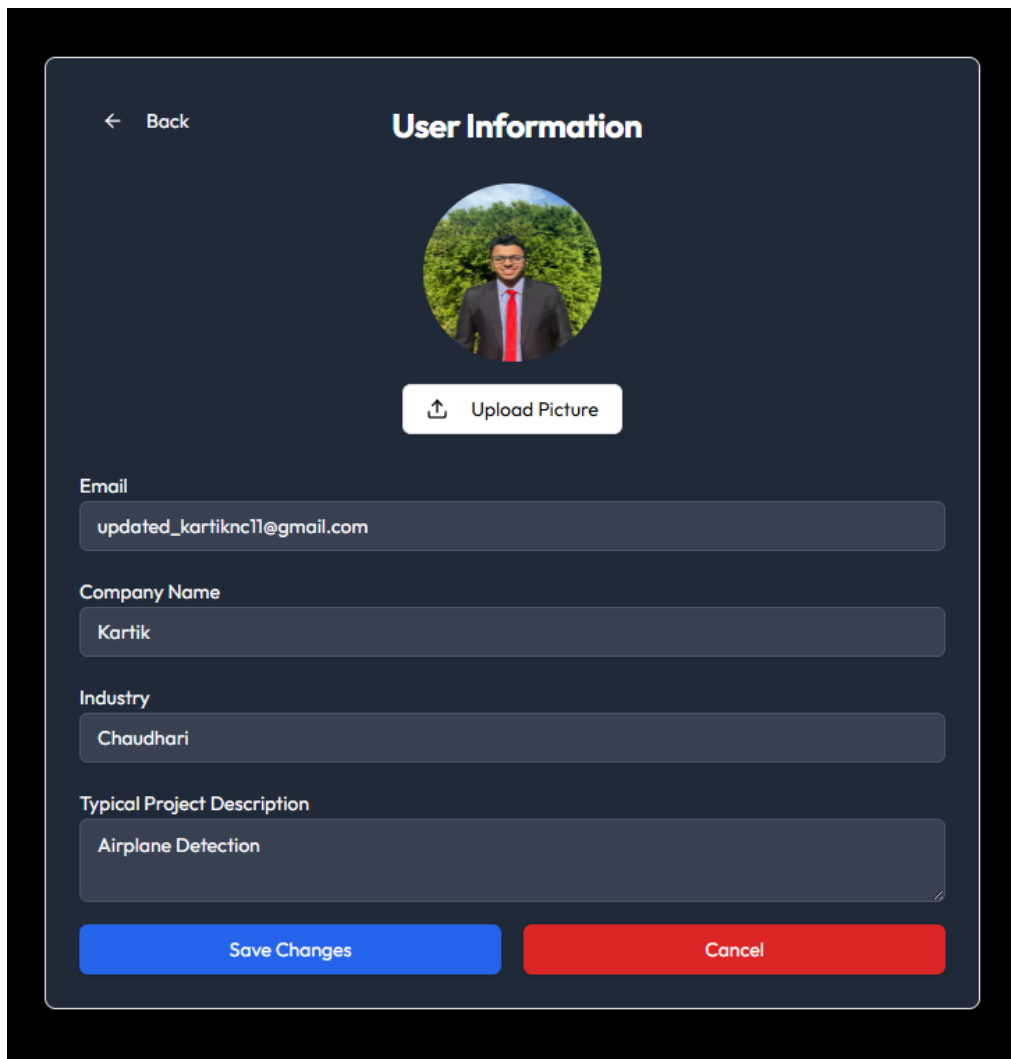


8. Profile Management




All users can update profile information:

- Click on the profile picture (top-right corner).
- Options include:
 - Edit Name
 - Update Email or Password
 - Change availability (Labellers only)
 - Upload a profile picture
 - View personal stats and history

A screenshot of a 'User Information' form. At the top left is a 'Back' button with a left arrow. The title 'User Information' is centered at the top. Below the title is a circular profile picture of a man in a suit. Underneath the picture is an 'Upload Picture' button with an upload icon. The form contains four text input fields: 'Email' with the value 'updated_kartiknc11@gmail.com', 'Company Name' with the value 'Kartik', 'Industry' with the value 'Chaudhari', and 'Typical Project Description' with the value 'Airplane Detection'. At the bottom are two buttons: a blue 'Save Changes' button and a red 'Cancel' button.

← Back

User Information



Upload Picture

Email

updated_kartiknc11@gmail.com

Company Name

Kartik

Industry

Chaudhari

Typical Project Description

Airplane Detection

Save Changes Cancel

9. Help & Tutorials

OrbitWatch offers a built-in tutorial:

- Accessible from dashboard and labeling interface.
- Covers:
 - Platform navigation
 - Labeling best practices
 - Tool usage and shortcuts
- Includes sample walkthroughs and practice tasks.

Label the Following Image

dog (1)

cat (2)

1.0x 100% 100%



Nothing to Label

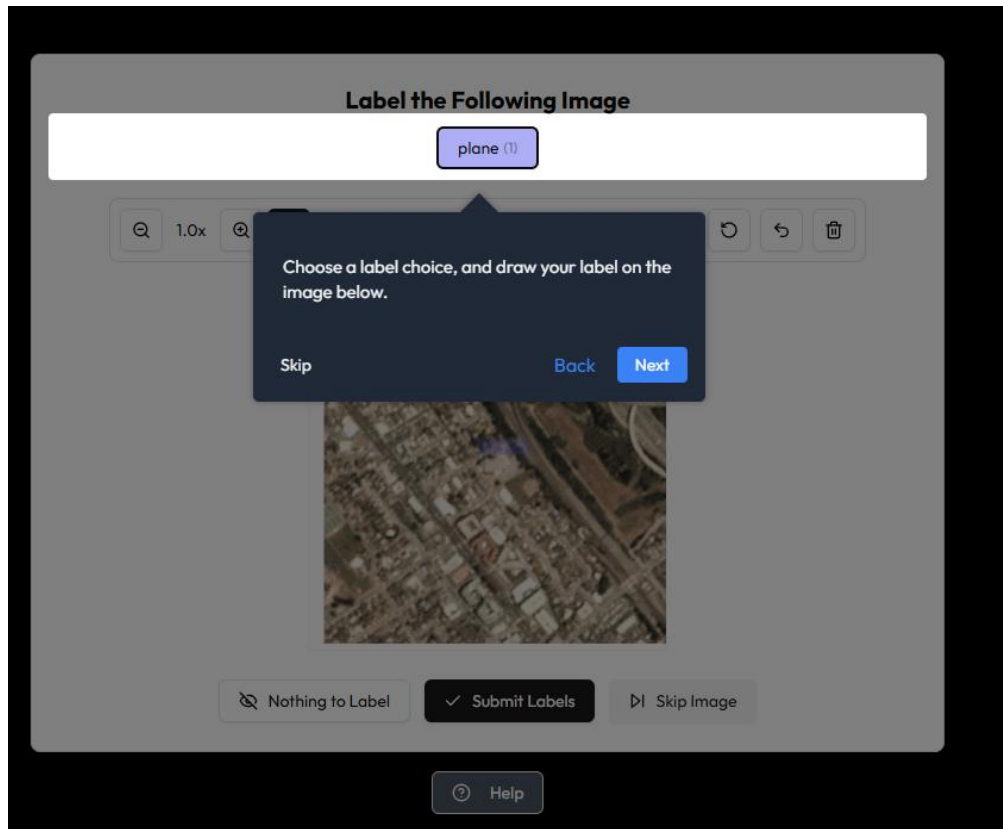
✓ Submit Labels

⌫ Skip Image

Welcome to the tutorial! Here's a small demonstration before we start.

Skip

Next



10. Troubleshooting

Issue	Solution
Cannot log in	Verify credentials or reset password
Image won't load	Refresh browser or clear cache
Labels not saving	Ensure "Submit Label" is clicked
Slow performance	Close other tabs or switch browsers
Project not appearing	Confirm upload completion and page refresh

11. Frequently Asked Questions (FAQ)

Q1. Can I work on more than one project as a labeller?

Yes, you can participate in any live project.

Q2. Can clients label images?

No, only registered labellers can annotate images.

Q3. Can I change my user type after registration?

No, you cannot change your user type after registration.

Q4. What happens if I skip many images?

There is no penalty, but frequent skips may affect trust ratings in the future.

Q5. Is there a way to re-label an already submitted image?

No, submitted labels are final. Contact support if needed.

Thank you for using OrbitWatch.

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