

Feeding Inspection System Operation Manual

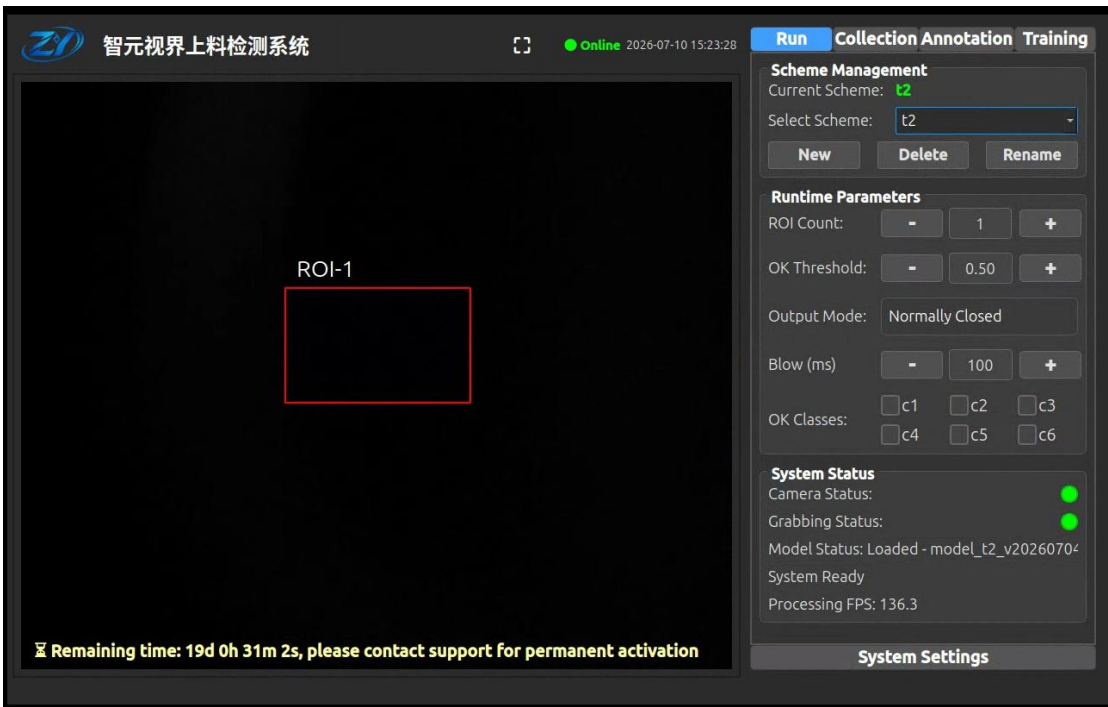
Training Content: Create New Project → Image Acquisition → Data Annotation → Model Training → Operating Parameter Configuration

一、Standard Overall Operation Flow

1. System Unlock
2. Create New Workpiece Project
3. Sample Image Acquisition (Front + Reverse Side)
4. Data Annotation & Quality Inspection
5. Data Upload & Model Training
6. Operating Parameter Configuration & Actual Inspection

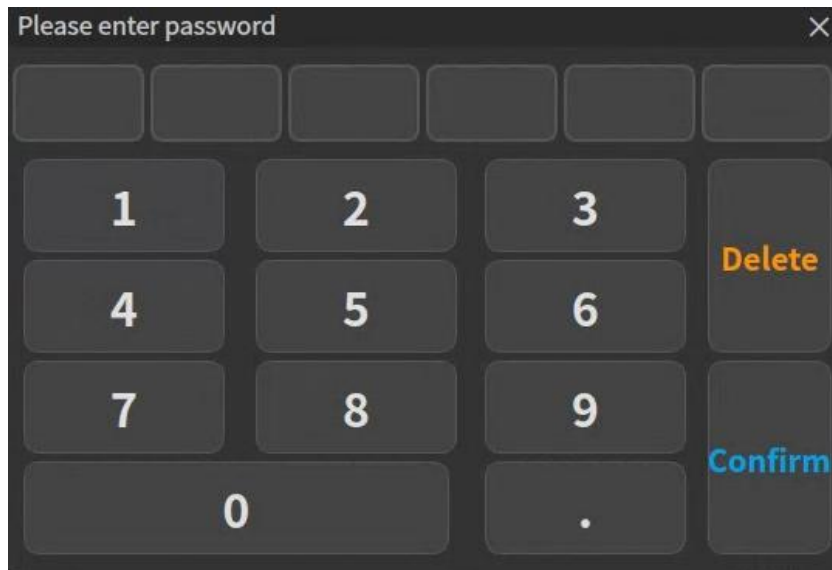
二、Step-by-Step Detailed Operation Guide

1. System Unlock & Create New Workpiece Project



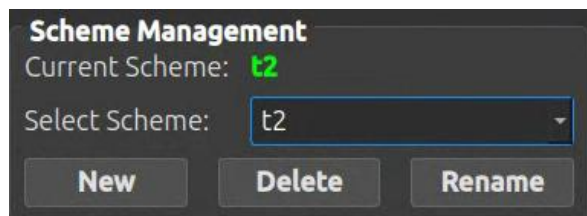
1.1 System Unlock

- The lock screen pops up automatically after software startup
- Enter unlock password: **666666**
- Click [Confirm] to enter the main interface

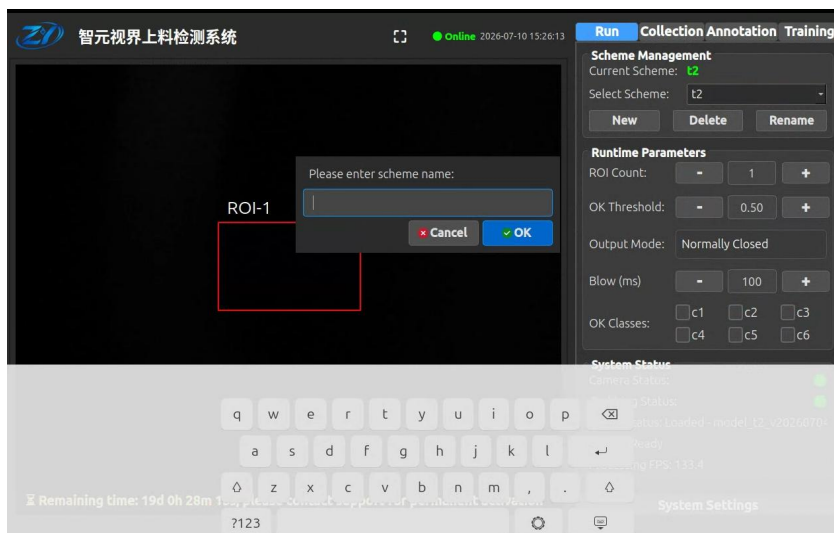


1.2 Create New Project

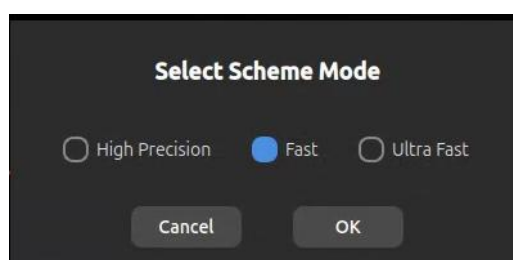
1. Click **[New]** in the Project Management area on the homepage



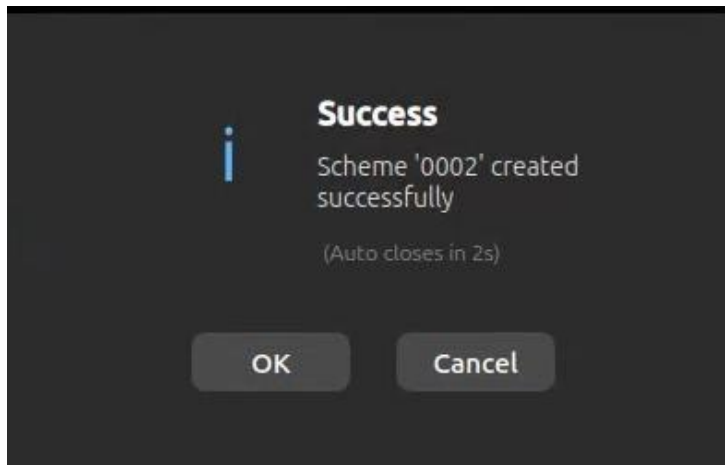
2. Slide up from the bottom of the screen to call out the on-screen keyboard



3. Input project name (Recommended format: Product Model + Date)
4. Project Select Scheme Mode ,Recommend the fast mode



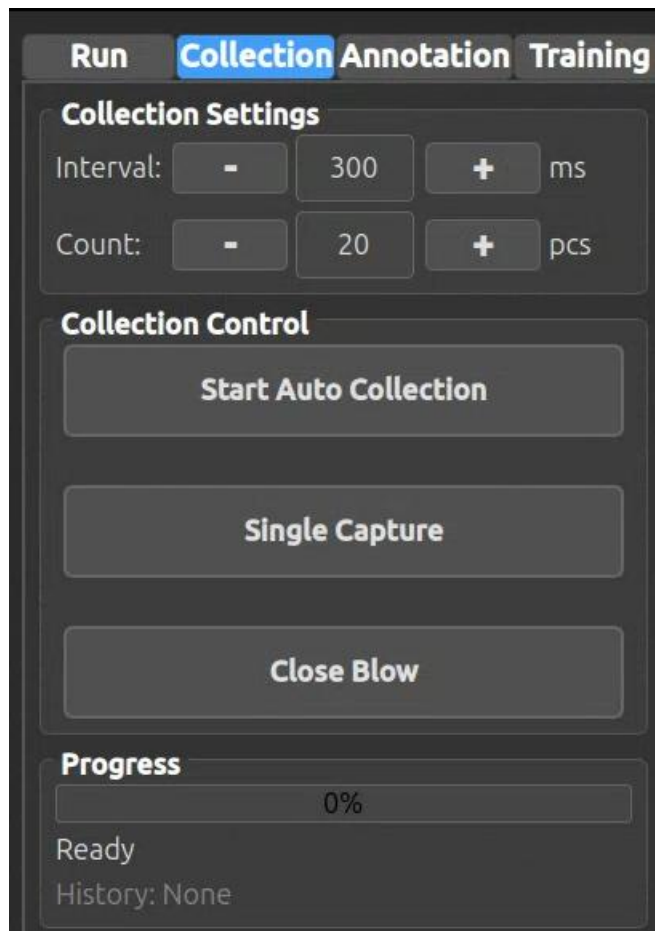
5. Prompt "Project created successfully", the current project will automatically switch to the new one



2. Sample Image Collection

2.1 Enter Collection Interface

Click the top tab [Collection]

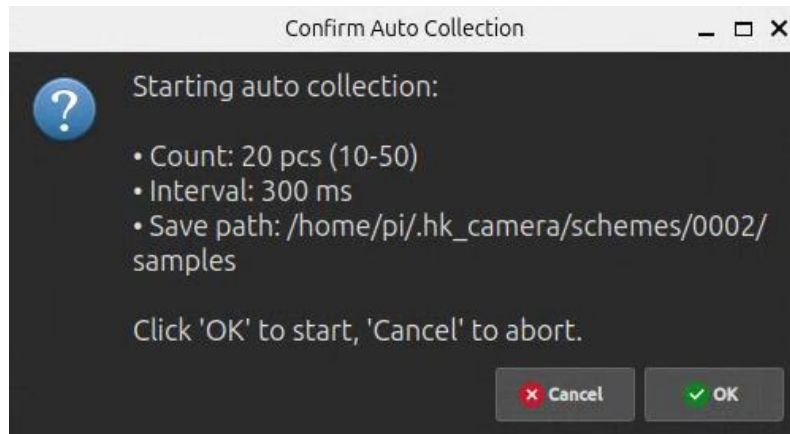


2.2 Set Collection Parameters (Default values are acceptable)

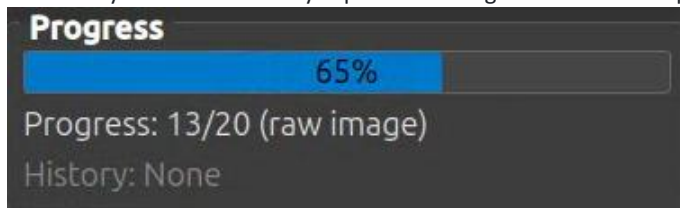
- Auto Collection interval: 300ms
- Collection Count : 20 images

2.3 Auto Collection of Qualified (OK) Samples

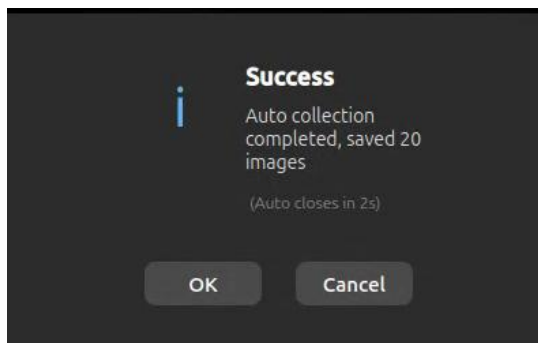
1. Click [Start Auto Collection]
2. A confirmation pop-up will appear, click [Confirm]



3. The system automatically captures 20 images with real-time progress bar display



4. Prompt "Auto Collection completed" to finish OK sample collection



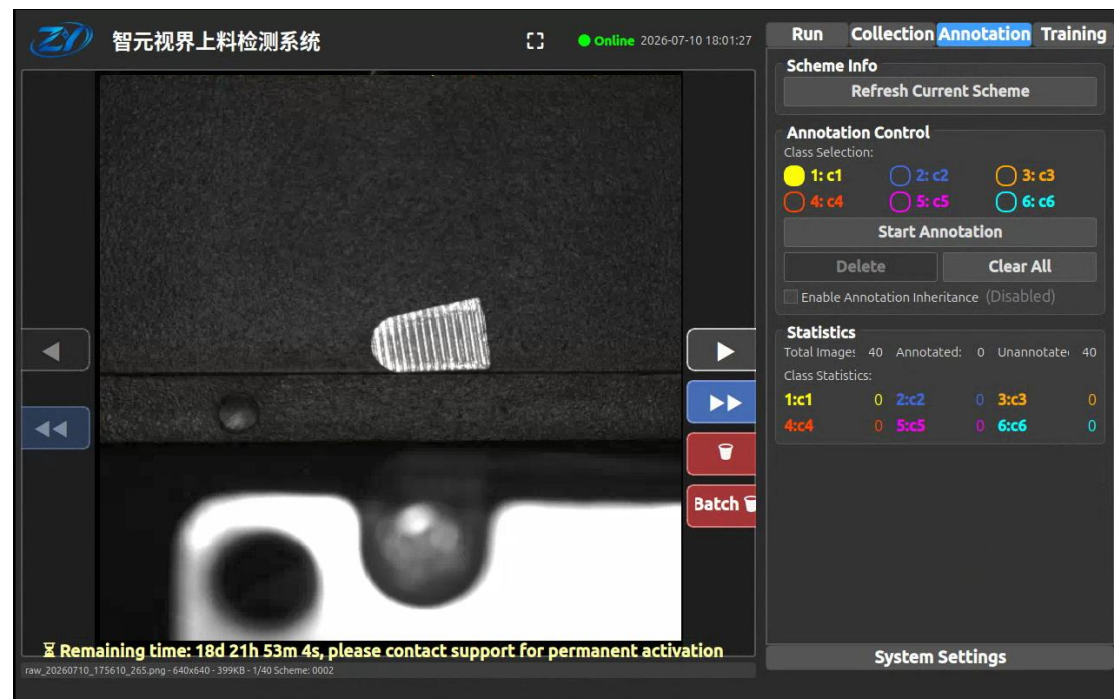
2.4 Defective (NG) Sample Collection

Place defective workpieces within the camera field of view, repeat the above **Collection** steps to capture another 20 images.

3. Data Annotation (Core Step)

3.1 Enter Annotation Interface

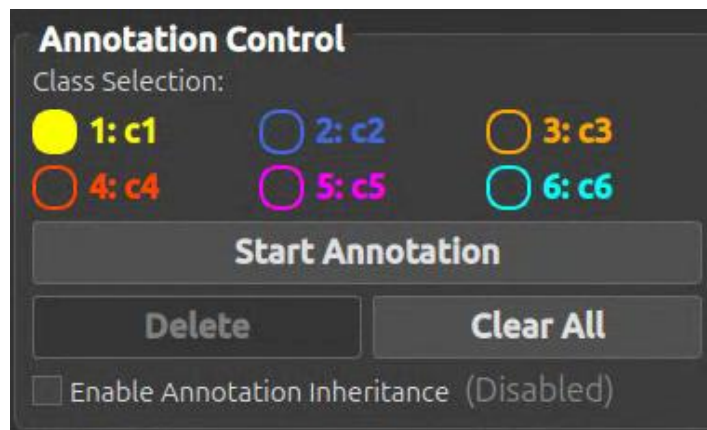
Click the top tab [Annotation]



3.2 Select Annotation Categories

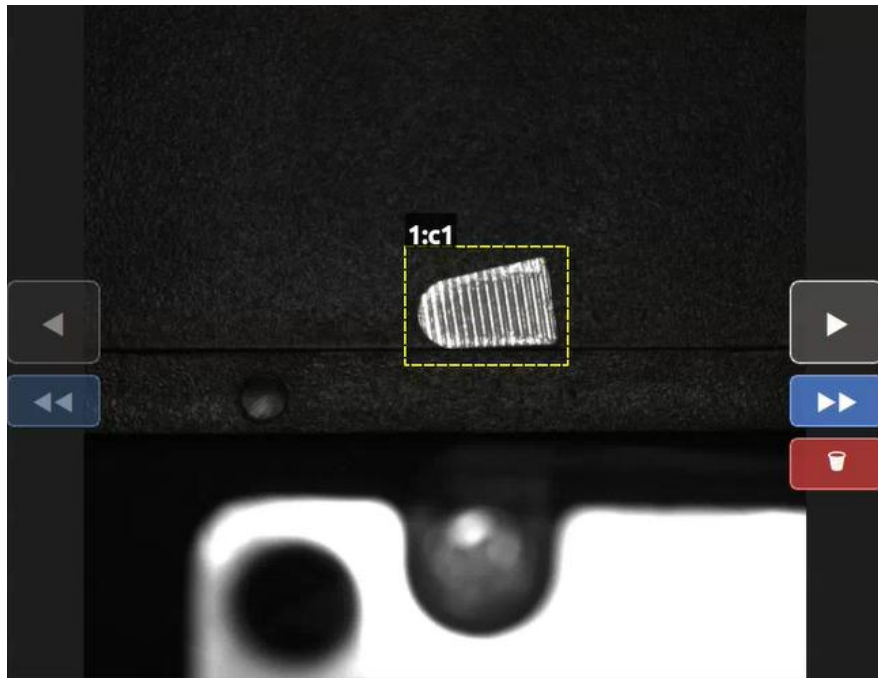
Two categories used in this demo:

- OK → Class 1 (c1) with yellow bounding box
- NG → Class 2 (c2) with blue bounding box



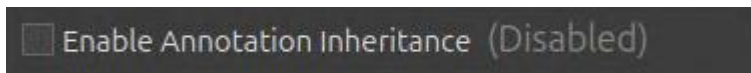
3.3 Start Annotation

1. Select the corresponding category
2. Click [Start Annotation]
3. Use mouse / touch screen to frame the target metal workpiece
4. A rectangular annotation box will be generated



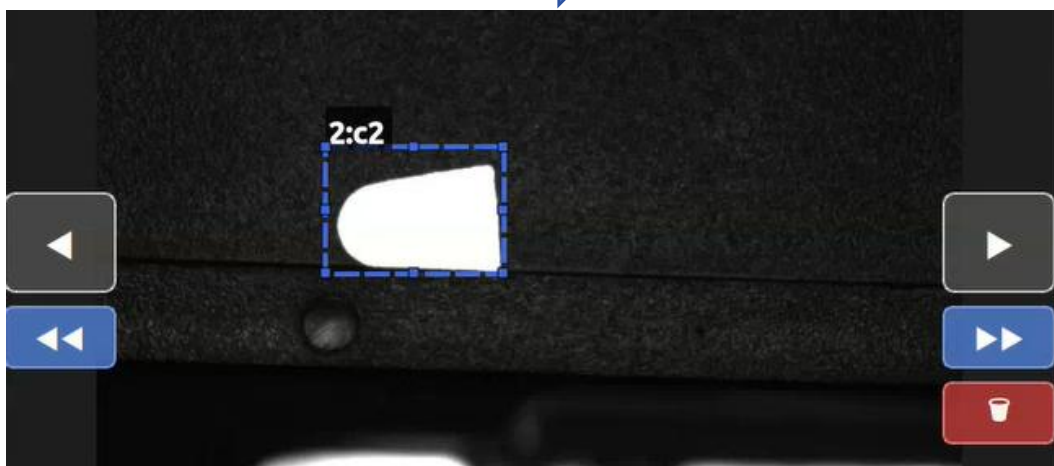
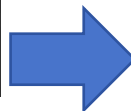
3.4 Efficient Annotation Tip

Check [Enable Annotation Inheritance]. The system will copy the box position from the previous image to the next, only minor adjustments are needed.



3.5 Complete Annotation for All Samples

1. Annotate all OK images under category c1 first
2. Switch category to c2 and annotate all NG images



3. Finish all annotations

3.6 Check Annotation Results

Verify statistics to meet the following requirements:

- Total images: 40

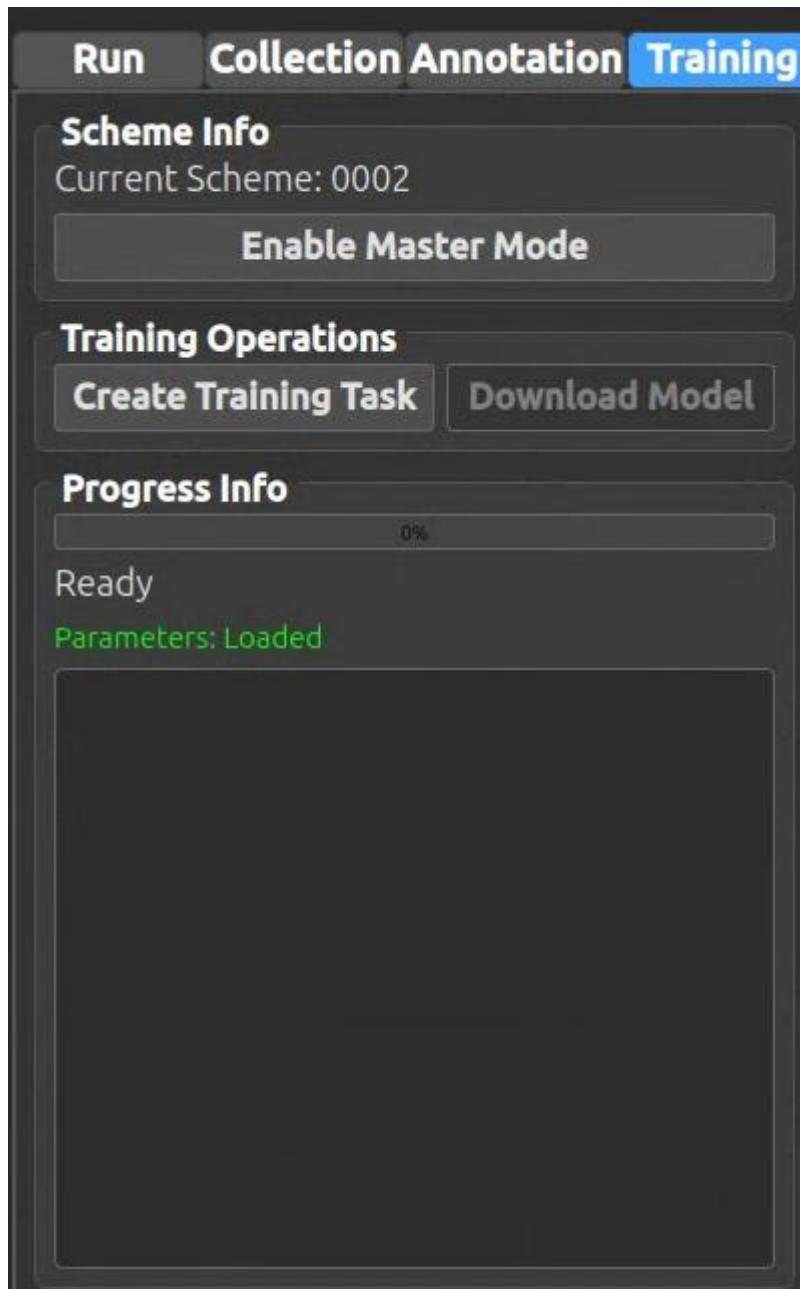
- Annotated images: 40
- Unannotated images: 0
- Each category contains no less than 20 images

Statistics					
Total Image	40	Annotated:	40	Unannotated	0
Class Statistics:					
1:c1	40	2:c2	30	3:c3	0
4:c4	0	5:c5	0	6:c6	0

4. Data Upload & Model Training

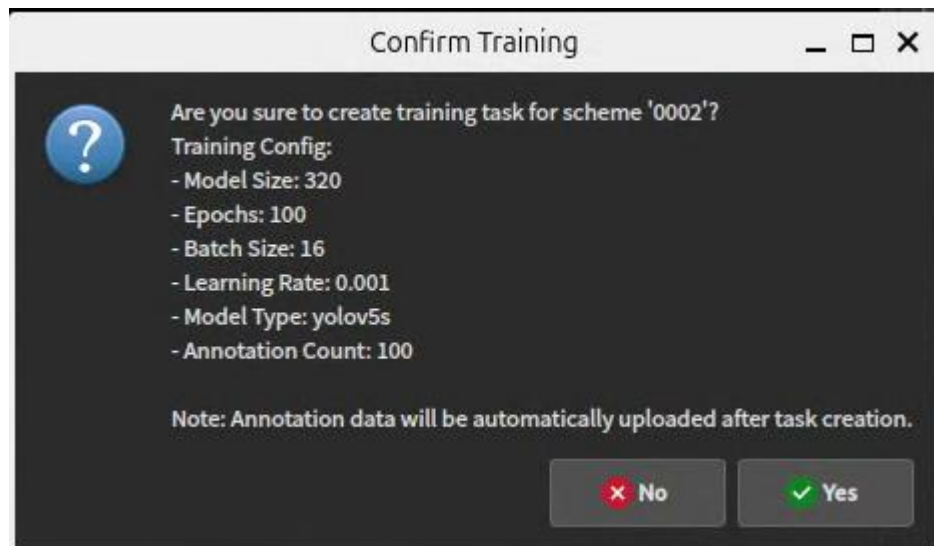
4.1 Enter Training Interface

Click the top tab [Training]



4.2 Create Training Task

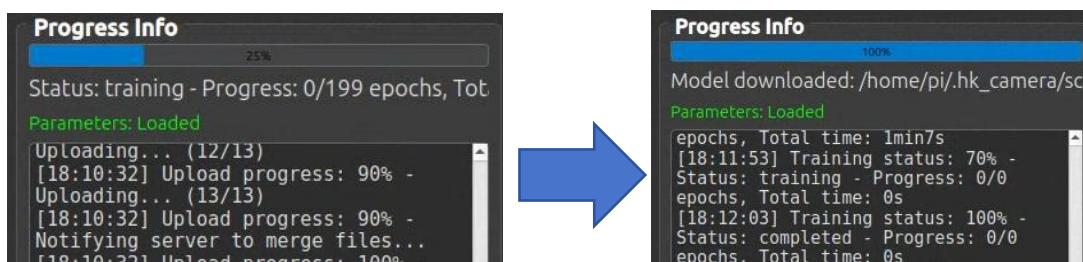
1. Click [Create Training Task]
2. Check training configuration (default values are acceptable):
 - Training epochs: 100
 - Batch size: 16
 - Learning rate: 0.001
 - Model type: yolov5s
3. Click [Yes] to start training



4.3 Training Process

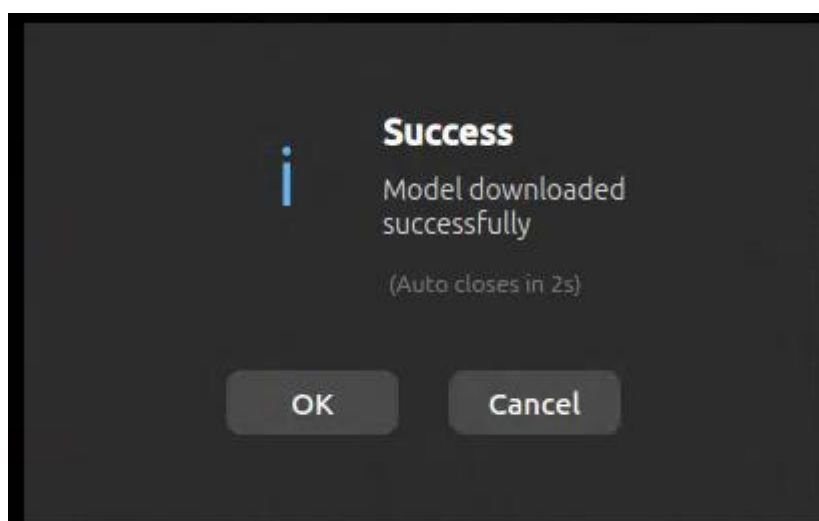
The system will automatically execute the following steps:

1. Upload annotated data
2. Cloud-based model training
3. Auto-download model after training completion
4. Training duration: Approximately 5 minutes
5. Auto lock screen during training: Enter password 666666 to unlock and resume



4.4 Training Completion

Prompt "Model download successfully", the full training workflow is finished.



5. Operating Parameter Configuration & Inspection

5.1 Enter Runing Interface

Click the top tab [Run]. The system automatically loads the latest trained model.

5.2 Parameter Definition

Runtime Parameters

ROI Count:

OK Threshold:

Output Mode:

Blow (ms)

OK Classes: ☐ c1 ☐ c2 ☐ c3
☐ c4 ☐ c5 ☐ c6

- **OK threshold:** Only considered valid if it exceeds this value. The higher the value, the stricter the requirement.
- **Blow:** Controls the operating speed of the electromagnetic valve
- **OK Class:** Select the qualified categories, and the rest will be automatically classified as non-compliant.

5.3 Parameter Definition

表格

Parameter Name	Function	Recommended Value
ROI Count	Number of detection regions	1 (Single channel)
OK Threshold	Minimum confidence for valid identification; higher value means stricter judgment	0.50
Output Mode	Normally open and normally closed solenoid valves	Normally Clsed
Blow	Duration of rejection solenoid valve action	0.05 second
OK Class	Define qualified product class	c1

5.4 Inspection Visual Feedback

Qualified workpiece (c1): Marked with green bounding box



Defective workpiece (c2): Marked with red bounding box

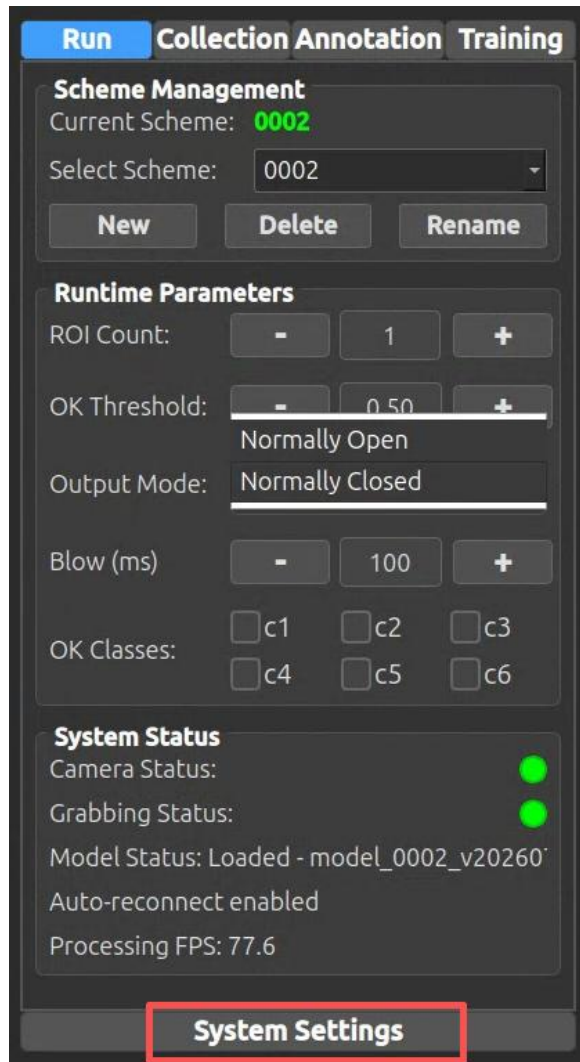


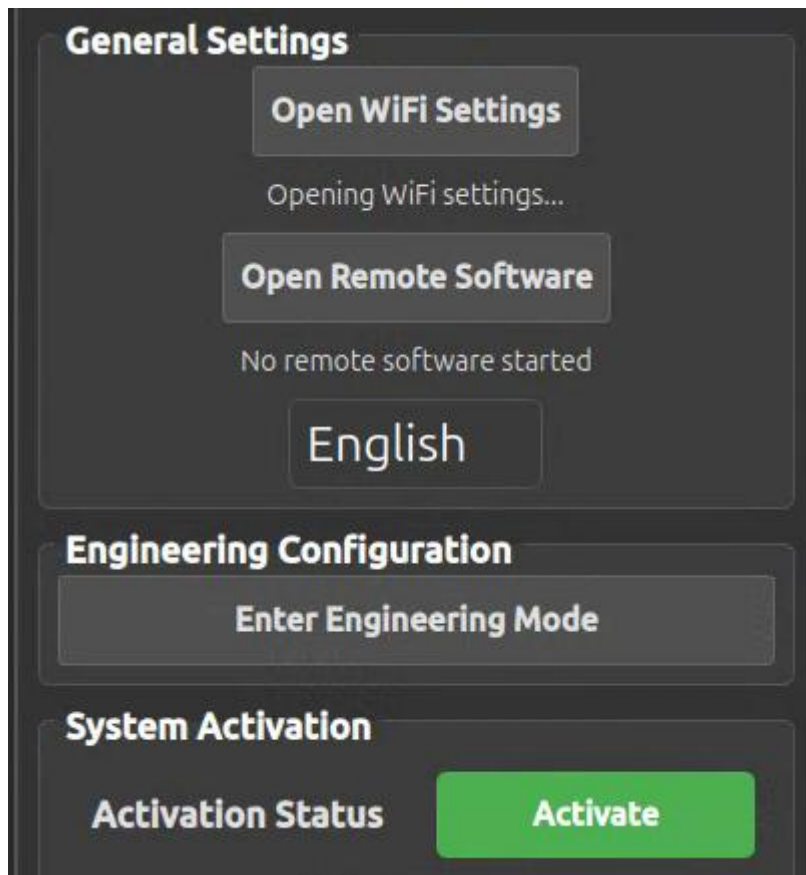
Real-time display: Category + Confidence score

6. Wi-Fi Connection & Remote Support

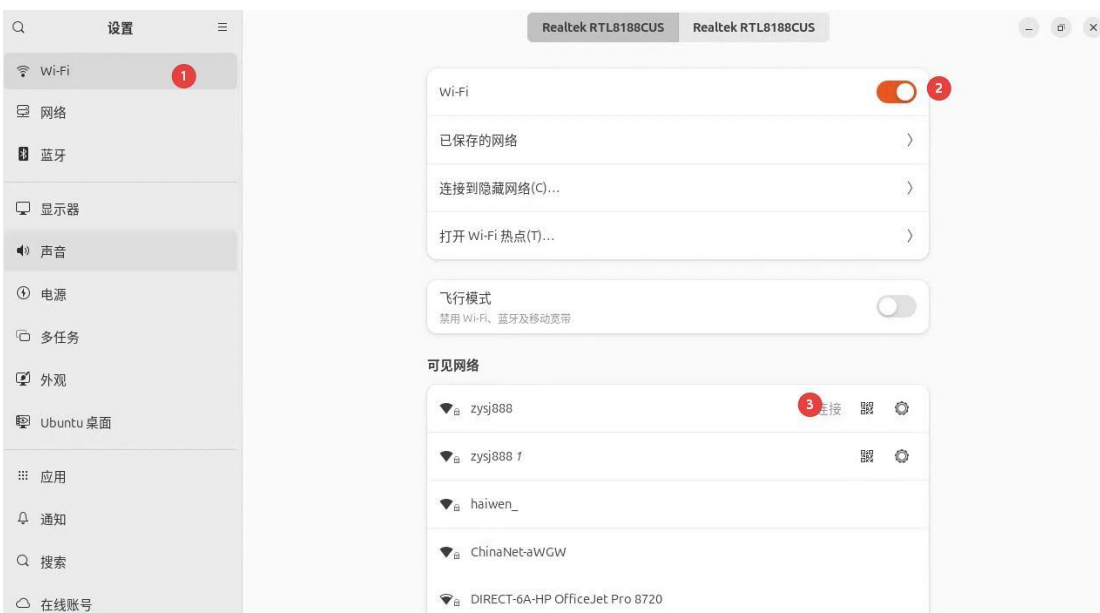
6.1 Wi-Fi Connection Operation

Click [System Settings] at the bottom of the software to enter the secondary setting page



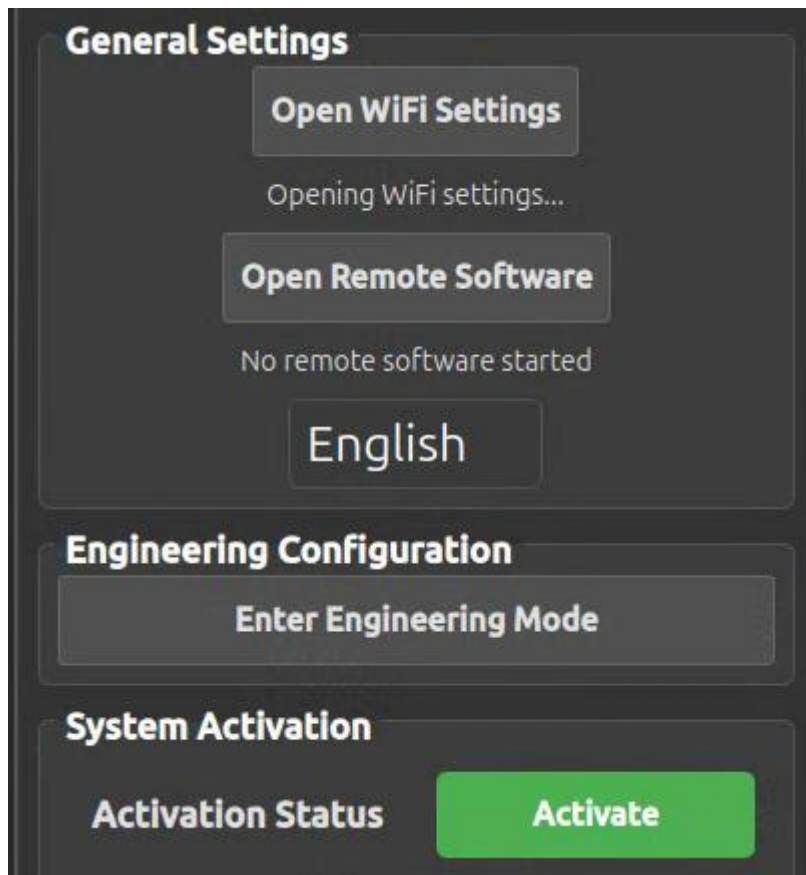


Click [Open WiFi Settings]

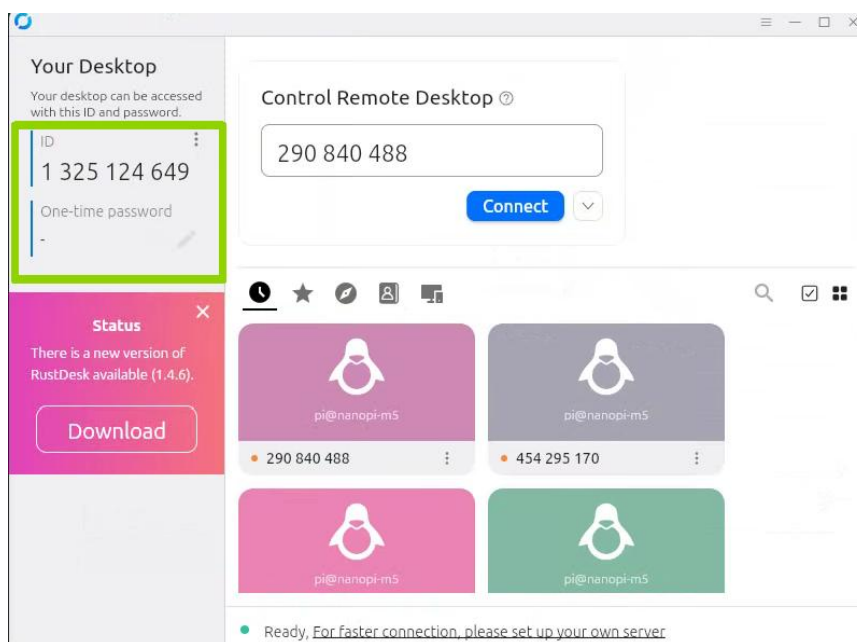


The "Connected" status indicates successful Wi-Fi setup

6.2 Remote Support



In the system setting page, click [Open Remote Software] under Remote Assistance section (RustDesk)



Capture the RustDesk interface and send the displayed ID & one-time password to our technical staff for remote troubleshooting.

三、 Important Operation Notes

1. Capture both front and reverse sides of samples, no less than 20 images per category
2. Draw accurate annotation boxes: avoid oversized, undersized or offset frames
3. Confirm all images are fully annotated before launching training
4. Do not close the software or disconnect the network during training
5. Confirm the model is fully loaded before running inspection
6. The system will auto-lock after long idle time; universal unlock password: 666666

四、 Common Troubleshooting

1. No images captured: Check camera wiring and camera online status
2. Annotation box inheritance failure: Re-check the [Enable Annotation Box Inheritance] checkbox
3. Training / data upload failure: Verify complete annotations and stable network connection
4. No recognition / no bounding boxes during operation: Confirm model loaded and parameters saved