

Edge AI Manual v1.0.0

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Introduction

Edge AI : Transforming 2D Images into Stunning 3D Creations

Edge AI streamlines the process of transforming 2D images into fully developed 3D meshes.

Key Features

Advanced Technology: Leverage cutting-edge AI for accurate and detailed conversions.

Refined Output Excellence: Accurately capture the key features and nuances of the original images.

Features Overview

Efficient Workflow

Enables the continuous conversion of multiple images, saving you time and boosting productivity for larger projects.

Unique Mesh Creation

Edge AI guarantees accurate rendering of individual images, capturing intricate details in 3D meshes and faithfully reflecting the original artwork.

Mesh Optimization

Automatically eliminate redundant geometry and unnecessary vertices from your models, resulting in optimized and clean meshes.

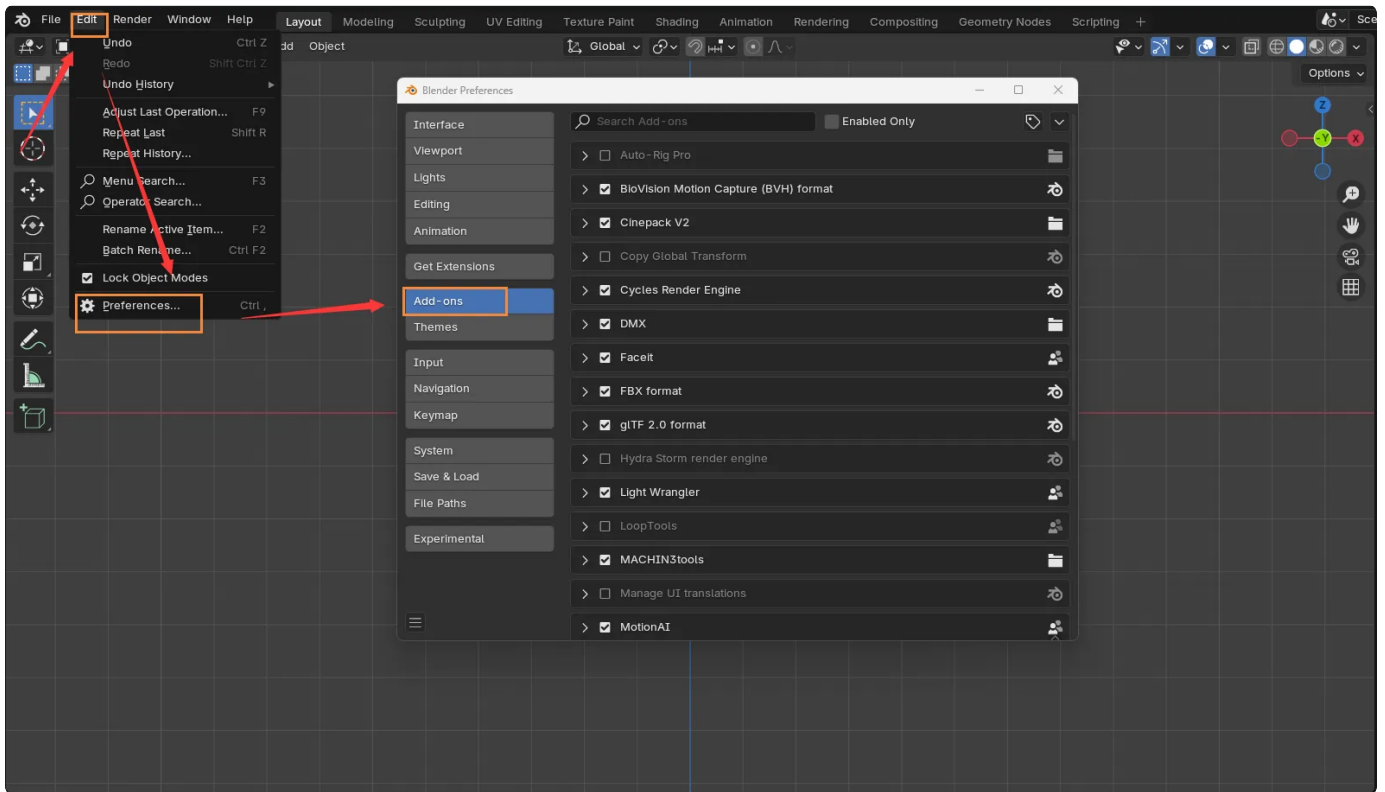
Installation

Download the Plugin

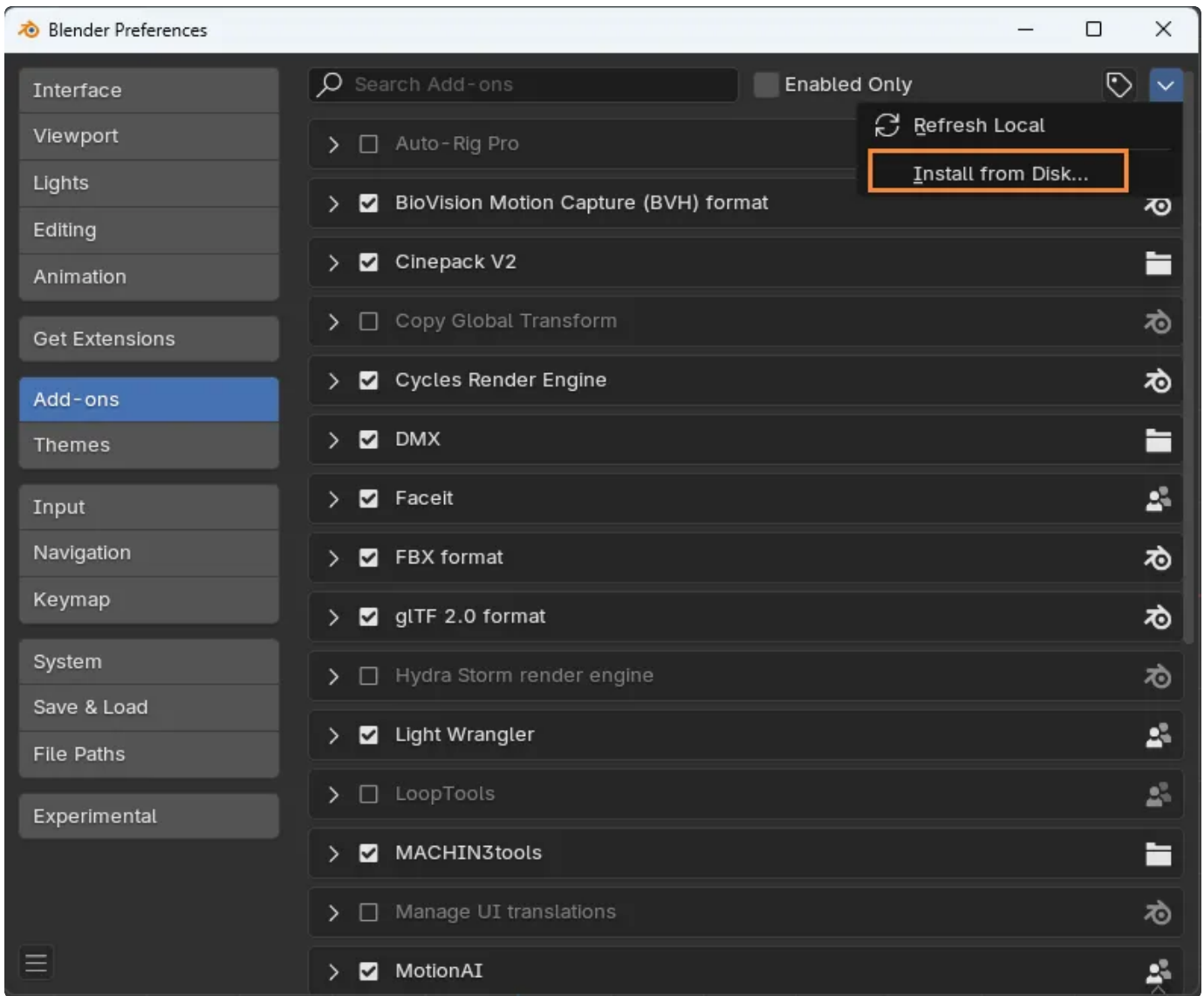
Obtain the Edge AI from the Blender Market.

Install Edge AI

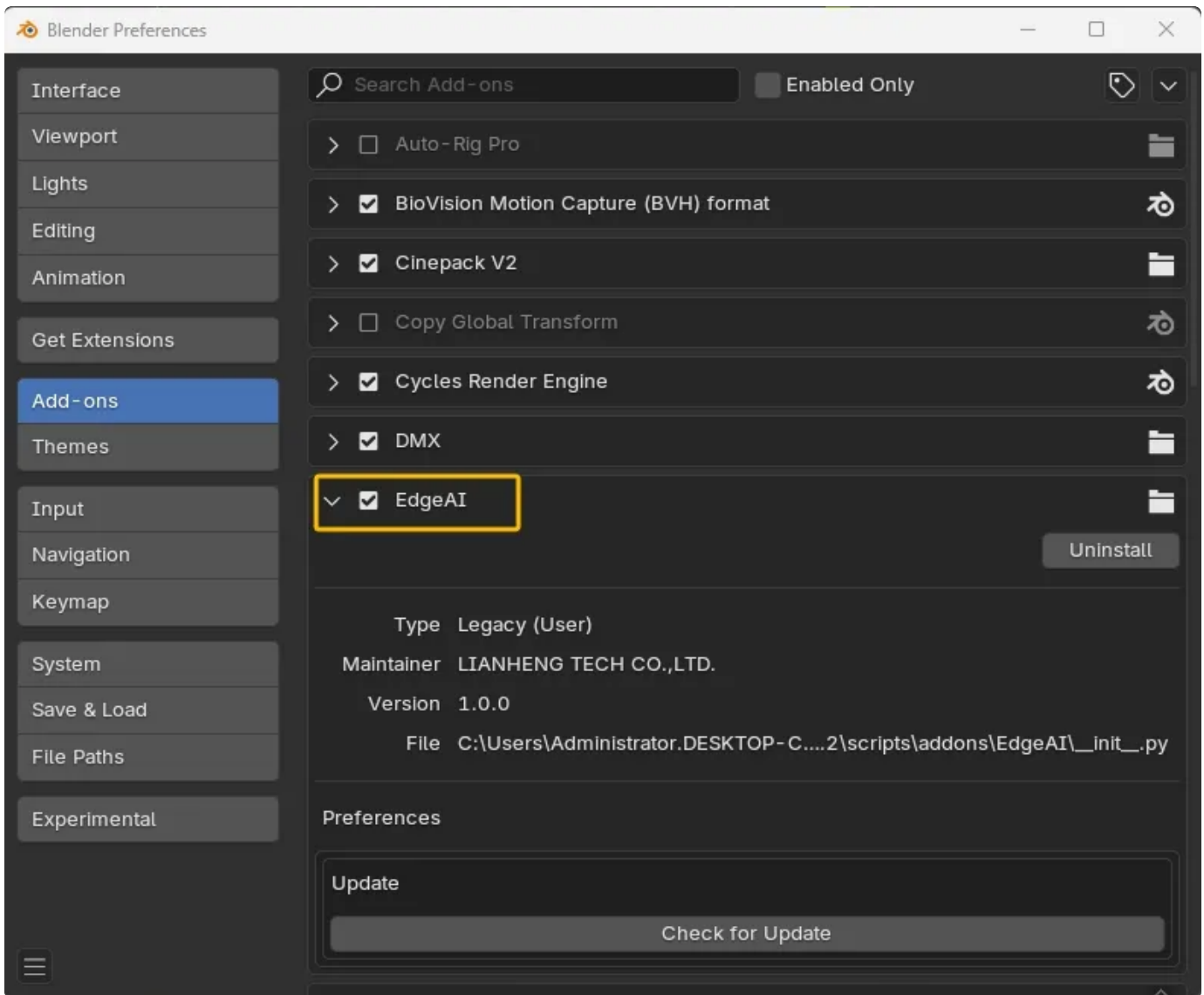
1. Open Blender -> Edit > Preferences > Add-ons.



2. Install from Disk → Select the EdgeAI.zip file



3. Enable the Add-on

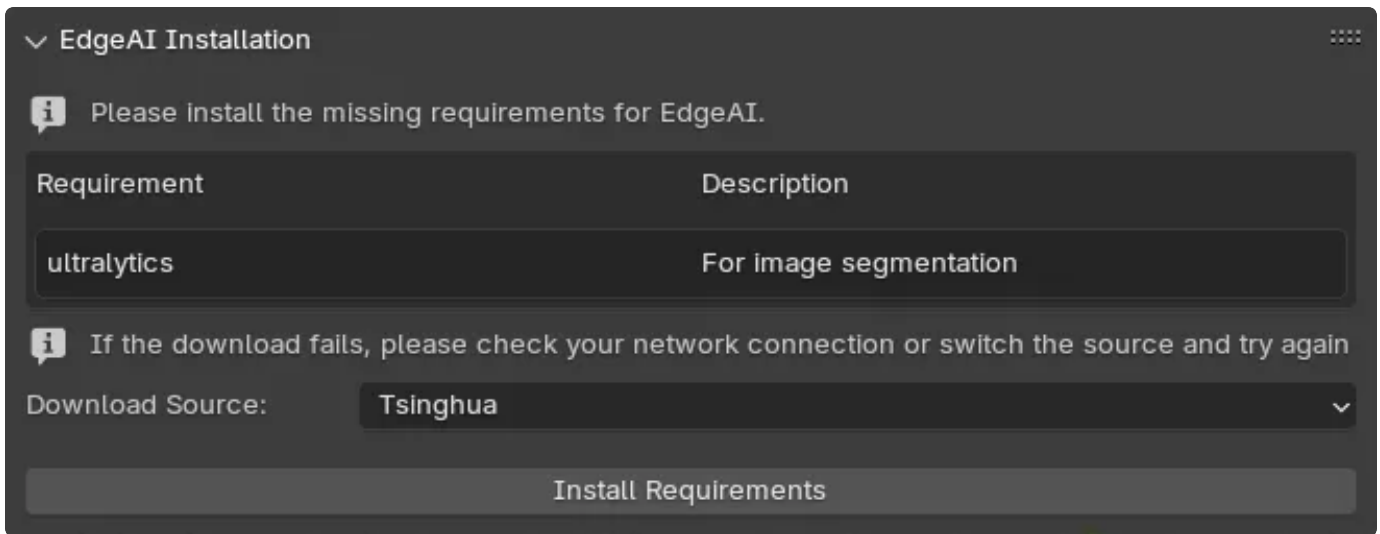


4. Open the Edge AI Panel and Install Dependencies

4.1. Press N on your keyboard or click the small arrow on the right side of the Blender interface to open the sidebar.

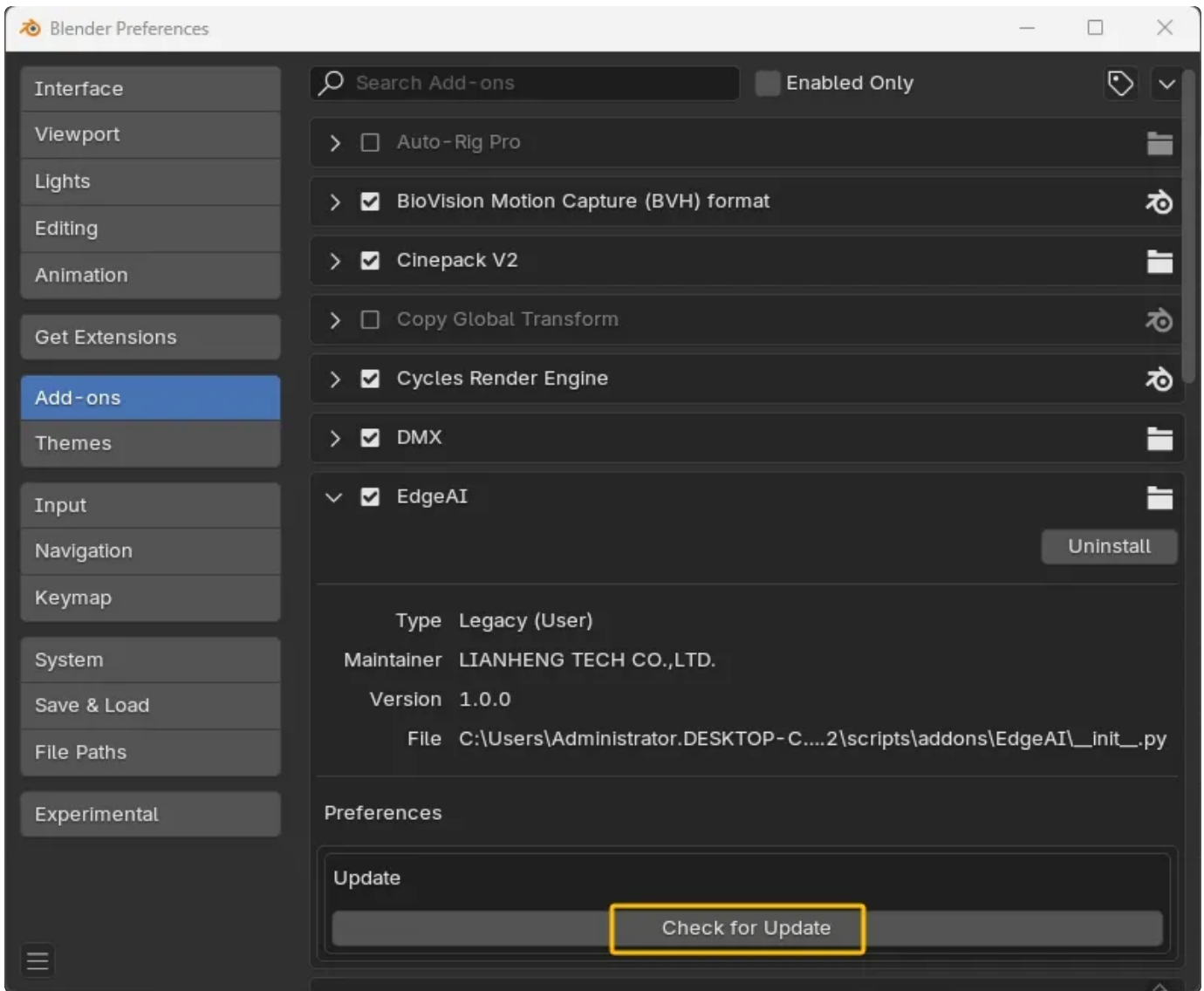
4.2. In the sidebar, find and select the Edge AI panel.

4.3. Edge AI will perform an environment check to ensure the dependency is set up correctly. If any required modules are missing, you will see an option to Install them. Click on this to automatically download and install the necessary requirements.



Update Edge AI

1. Open Blender -> Edit > Preferences > Add-ons.
2. Find Edge AI -> Check for Update.



Quick Start – Recognize Everything

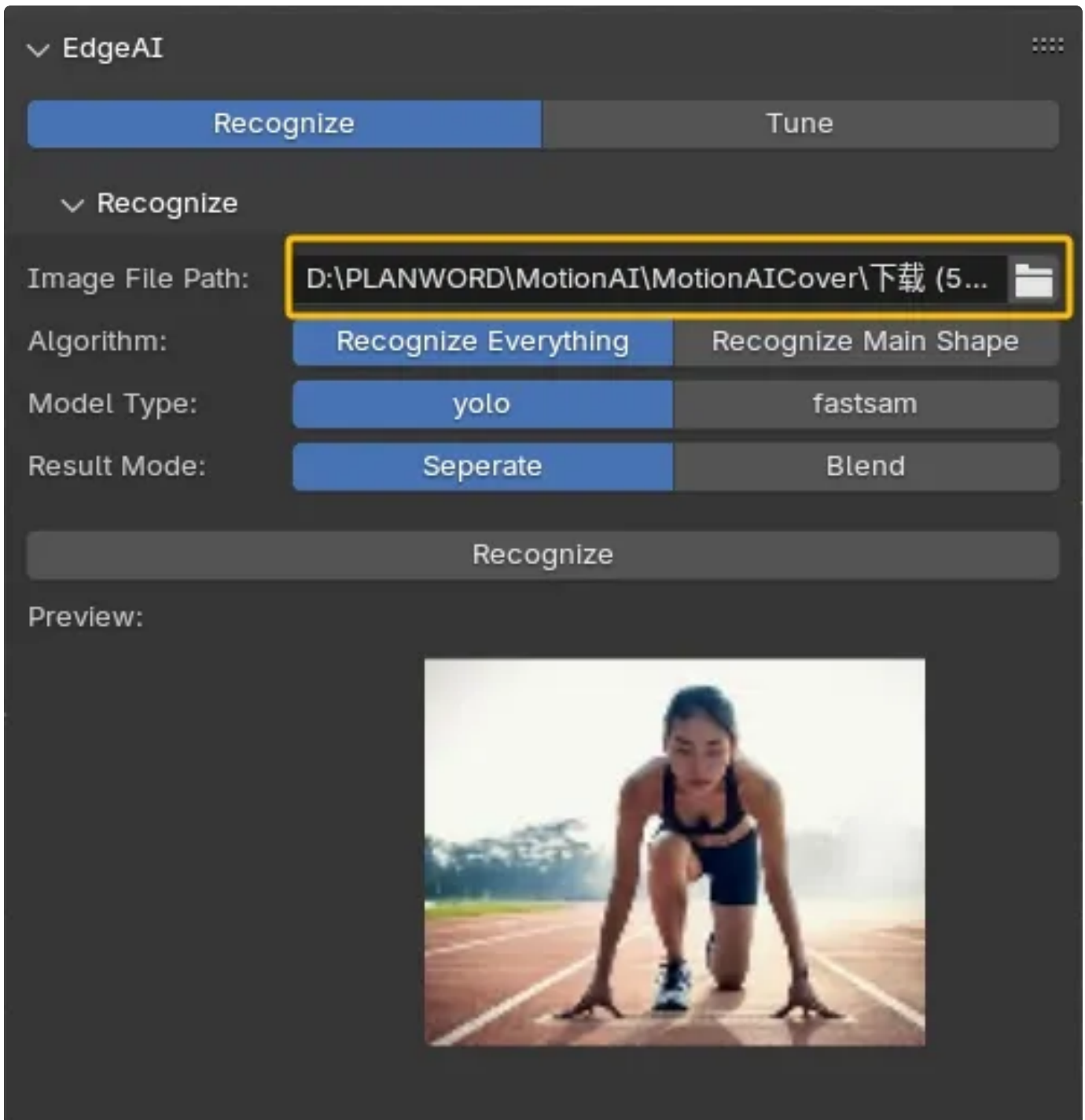
[WorkFlow](#): Recognize Everything

To start using Edge AI, follow the steps below:

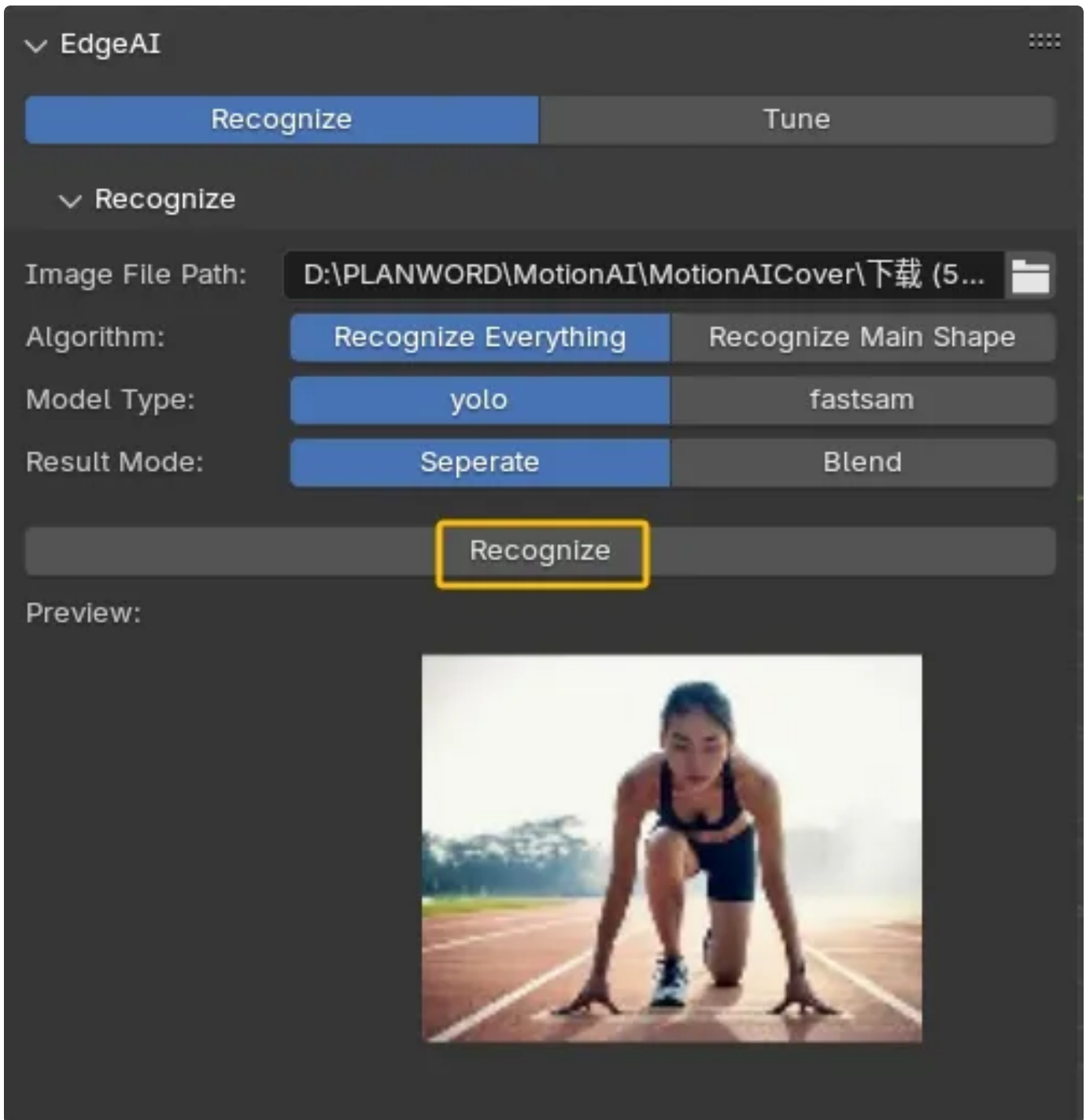
Recognize

If you need to process highly complex images (such as photographs, architectural groups, etc.), then choosing **Recognize Everything** is undoubtedly the best option.

1. Select the image path, and your image will be displayed below.



2. Choose the algorithm as "**Recognize Everything**".
3. Select the model type : yolo or fastsam
4. Choose the method for generating the final model: Separate or Blend
5. Click on "**Recognize**" to start the process.
6. Switch to **Material Preview Mode** to view the recognition results.

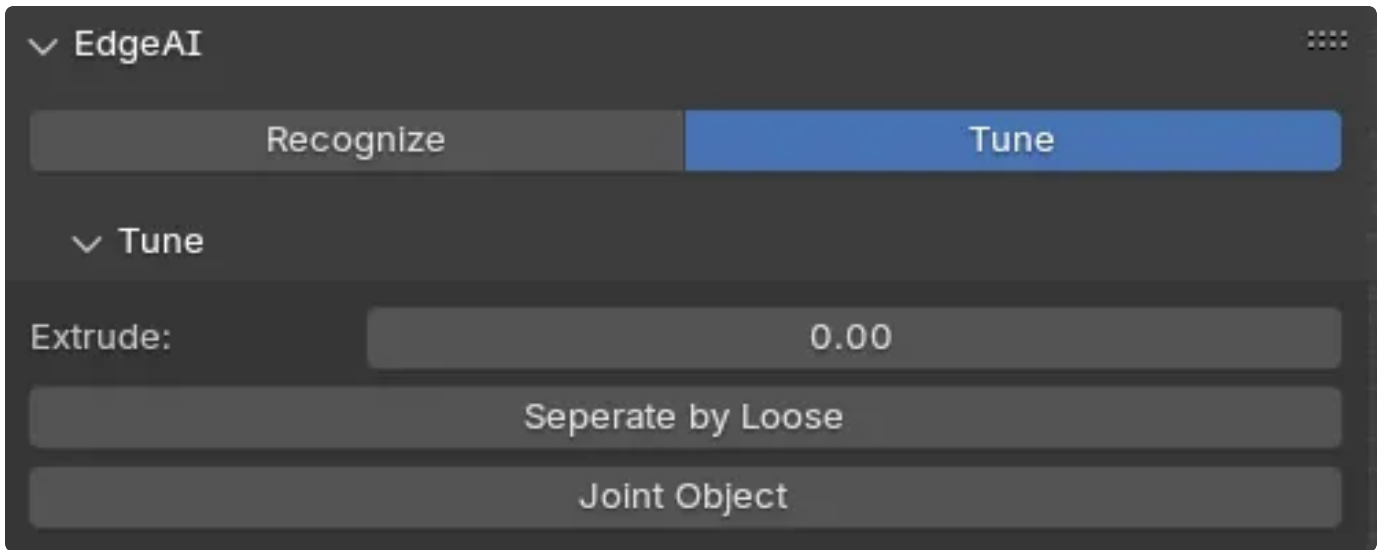


Tune

1. Extrude:
 - Select the mesh you want to extrude.
 - Drag the slider to control the extrusion amount.
2. Separate by Loose:
 - Select the mesh you want to separate.
 - Click '**Separate By Loose**' button.

3. Joint Object:

- Select the objects you want to join.
- Click 'Joint Object' button.



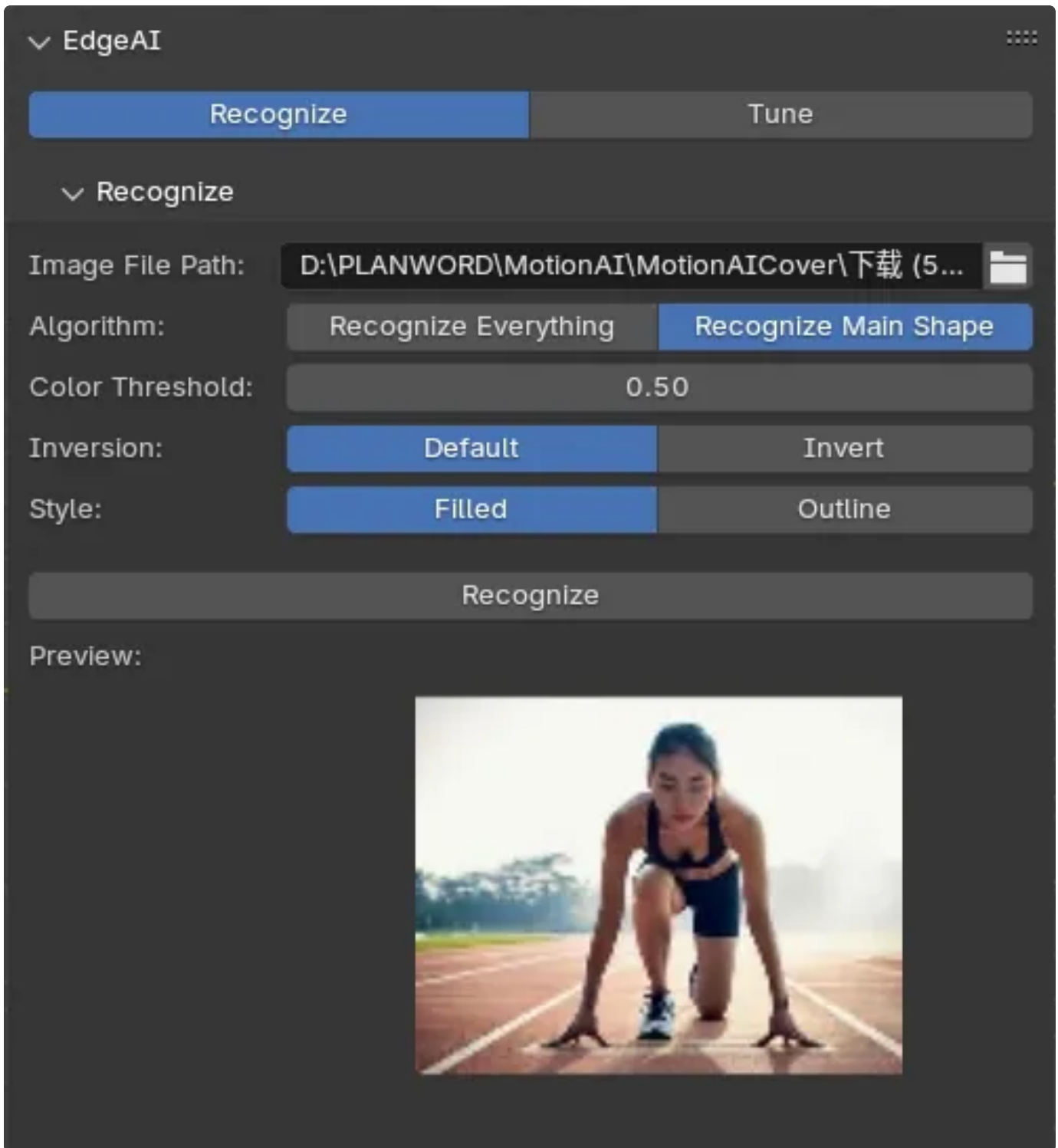
Quick Start – Recognize Main Shape

[WorkFlow](#): Recognize Main Shape

To start using Edge AI, follow the steps below:

Recognize

1. Select the image path, and your image will be displayed below.



2. Select the algorithm as Recognize Main Shape: This option only supports images with clear dividing lines, such as icons.

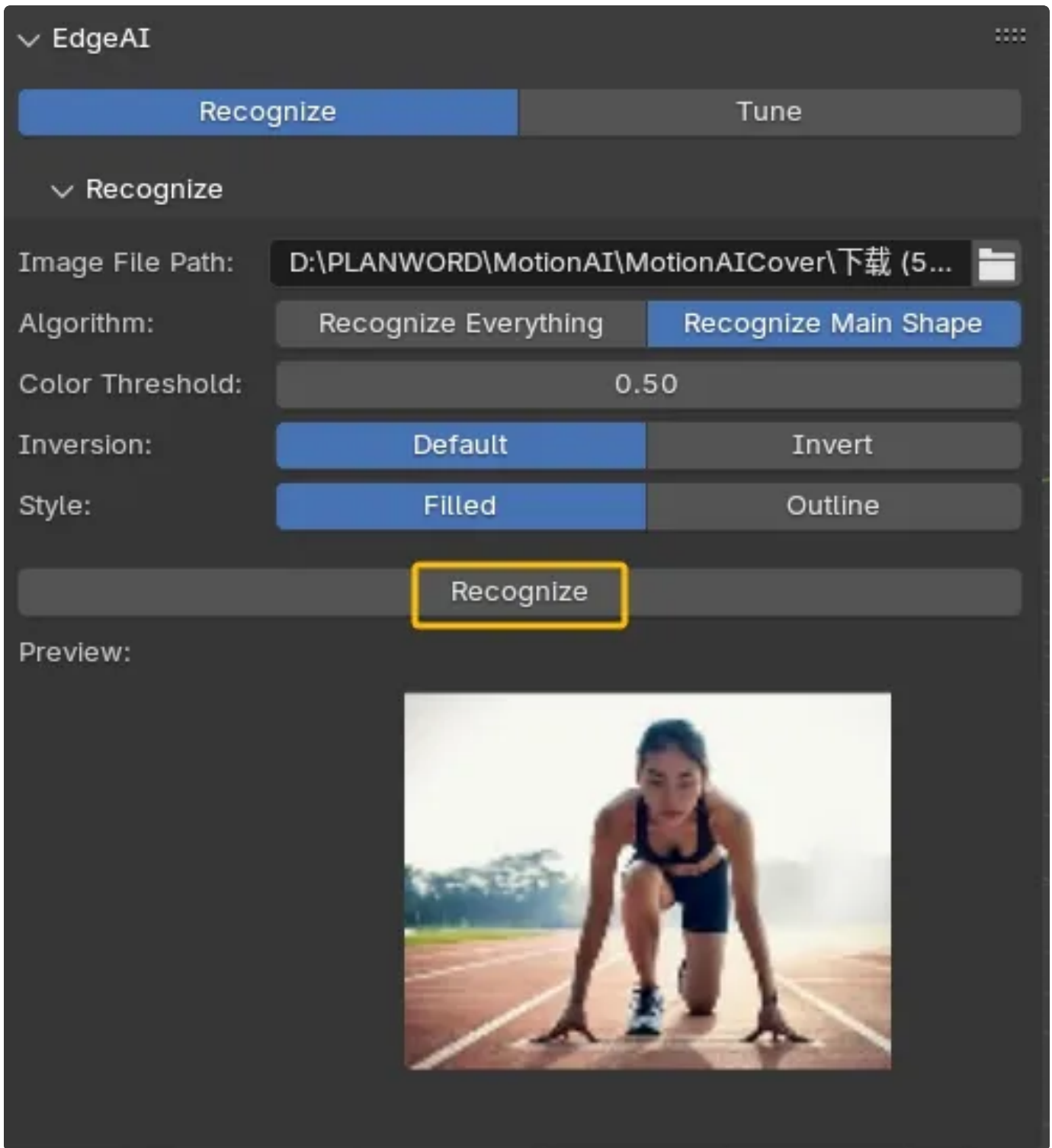
If you are working with complex images, it is recommended to choose the **Recognize Everything** option; the steps for this can be found in the **Quick Start – Recognize Everything** section.

3. Settings

- **Color Threshold:** A low value will keep more color details, while a high value will merge similar colors together.
- **Inversion:** Default or Invert.
- **Style:** Filled or Outline.

Color Threshold:	0.25	
Inversion:	Default	Invert
Style:	Filled	Outline

4. Click on "Recognize" to initiate the process.



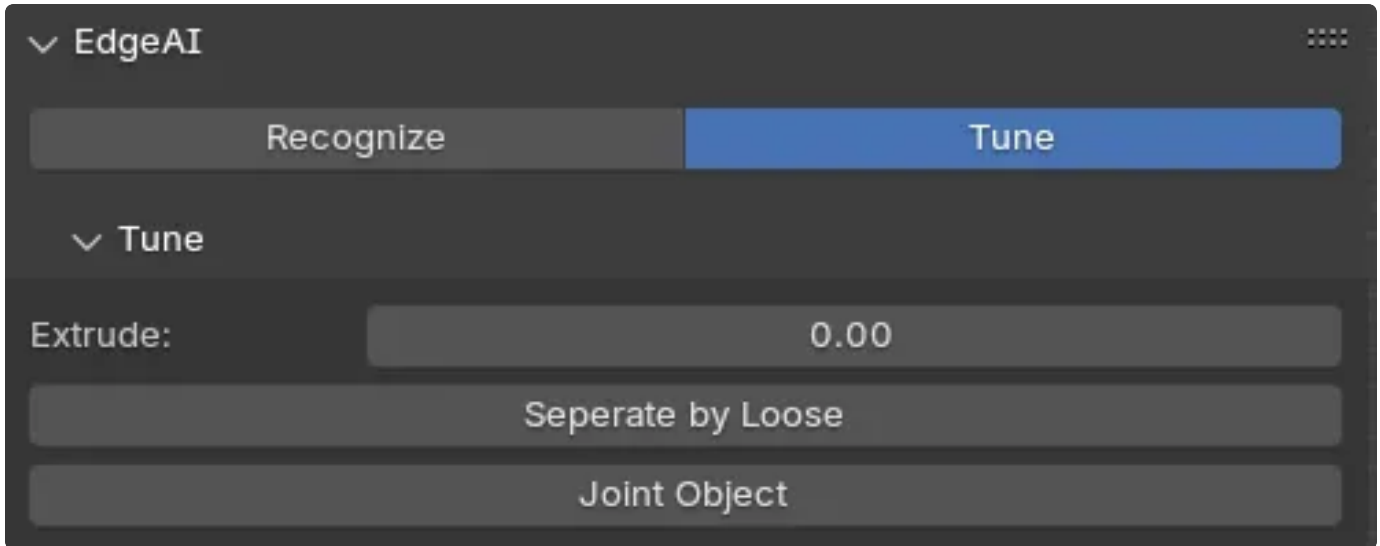
Tune

1. Extrude:
 - Select the mesh you want to extrude.
 - Drag the slider to control the extrusion amount.
2. Separate by Loose:

- Select the mesh you want to separate.
- Click '**Separate By Loose**' button

3. Joint Object:

- Select the objects you want to join.
- Click '**Joint Object**' button.



Panel Overviews and Usage Instructions


Recognize Panel

Utilizes EdgeAI algorithms to detect the content within an image and convert it into a 3D mesh.

EdgeAI

Recognize Tune

Recognize

Image File Path: D:\PLANWORD\MotionAI\MotionAICover\下载 (5... 


Algorithm: Recognize Everything Recognize Main Shape

Model Type: yolo fastsam

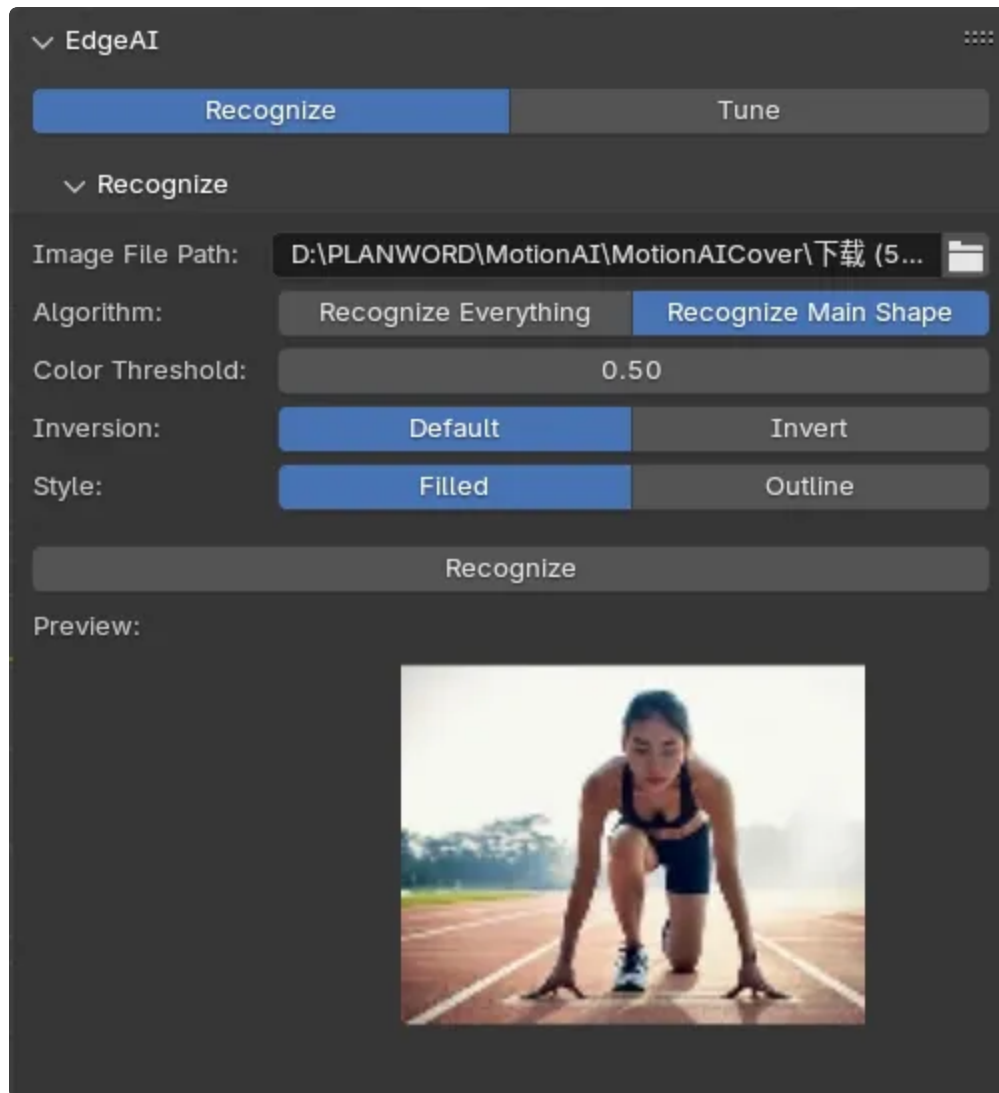
Result Mode: Seperate Blend

Recognize

Preview:



Recognize Everything



Recognize Main Shape

Function

1. Recognize Everything

a. Model Type: you have two algorithm options

- yolo: Provides fast and accurate detection across various classes
- Offers quick segmentation of images into distinct objects with high efficiency.

b. Result Mode

- Separate: The algorithm separates the main elements based on the recognized content.
- Blend: Outputs the entire graphic as a single object, based on the algorithm's recognition of the content.

2. Recognize Main Shape

- #### a. Color Threshold: This setting adjusts the sensitivity of the color detection,

allowing you to define which colors are considered during the recognition process.

b. Inversion

- Default: The algorithm processes the image as it is.
- Invert: The algorithm will reverse the colors, which can be useful for specific image types.

c. Style

- Filled: Outputs a solid shape based on the recognized areas.
- Outline: Outputs only the contours of the recognized areas.

Tips

1. For Color Threshold

A higher threshold is better for simpler images where you want to group similar colors together.

2. Maintain Order

The recognized results will be displayed at the world origin. If you are working with multiple images, it's recommended to move the previously recognized results to the side for better organization.

3. Be Patient for Complexity

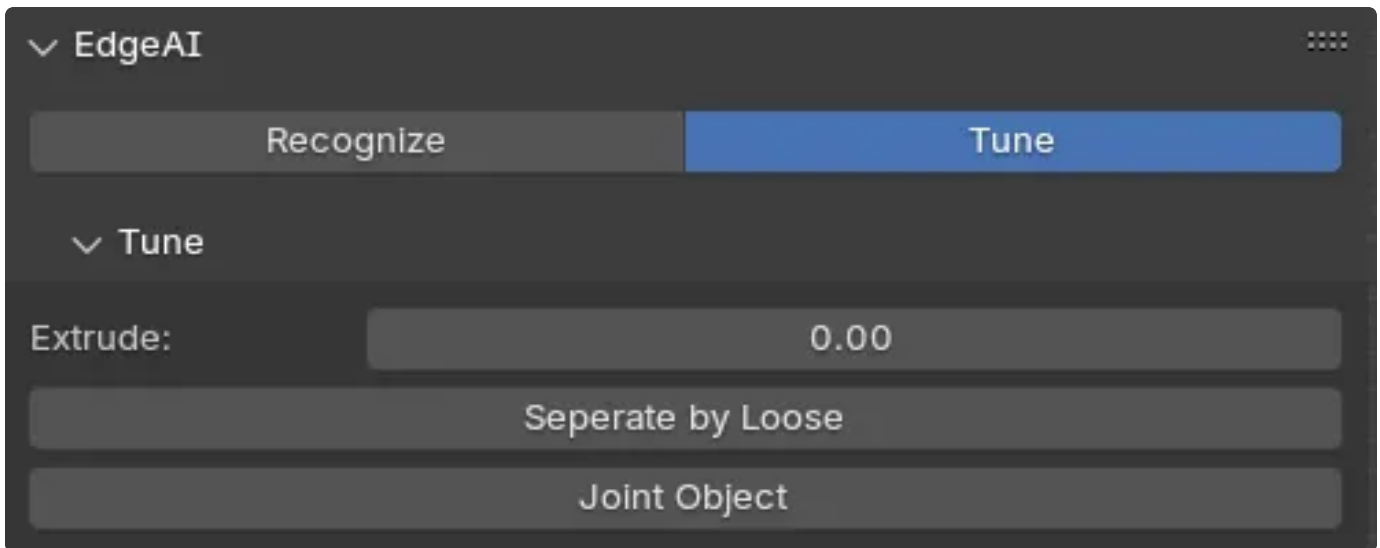
If your image contains a large number of elements, the recognition process may take some time. Please be patient.

4. Customize Your Selection

If you select "**Separate**" in the **Recognize Everything** option, the process may generate more elements than you need. You can select the ones you want to keep and delete the rest as needed.

Tune Panel

The Tune Panel adjusts the mesh by extruding, separating, and merging.



Function

1. Extrude:
 - Select the mesh you want to extrude.
 - Drag the slider to control the extrusion amount.
2. Separate By Loose: This option divides the mesh based on loose parts, allowing for finer control over the elements of your model.
 - Select the mesh you want to separate.
 - Click '**Separate By Loose**' to divide the mesh into individual components, allowing for easier editing and manipulation of specific sections as independent elements.
3. Joint Object:
 - Select the objects you want to join.
 - Click '**Joint Object**' to combine them into a single mesh, making it easier to manage and edit multiple components as one unified structure.

Troubleshooting

A Journey Through Challenges

Separate By Loose Does Not Work

Imagine you're ready to split your mesh, but when you try to use "Separate By Loose," nothing happens. This could be because your mesh is too clean, with no loose parts for the algorithm to detect.