

Match Move Tutorial

Digital Visual Effect, Spring 2021

2021/05/05

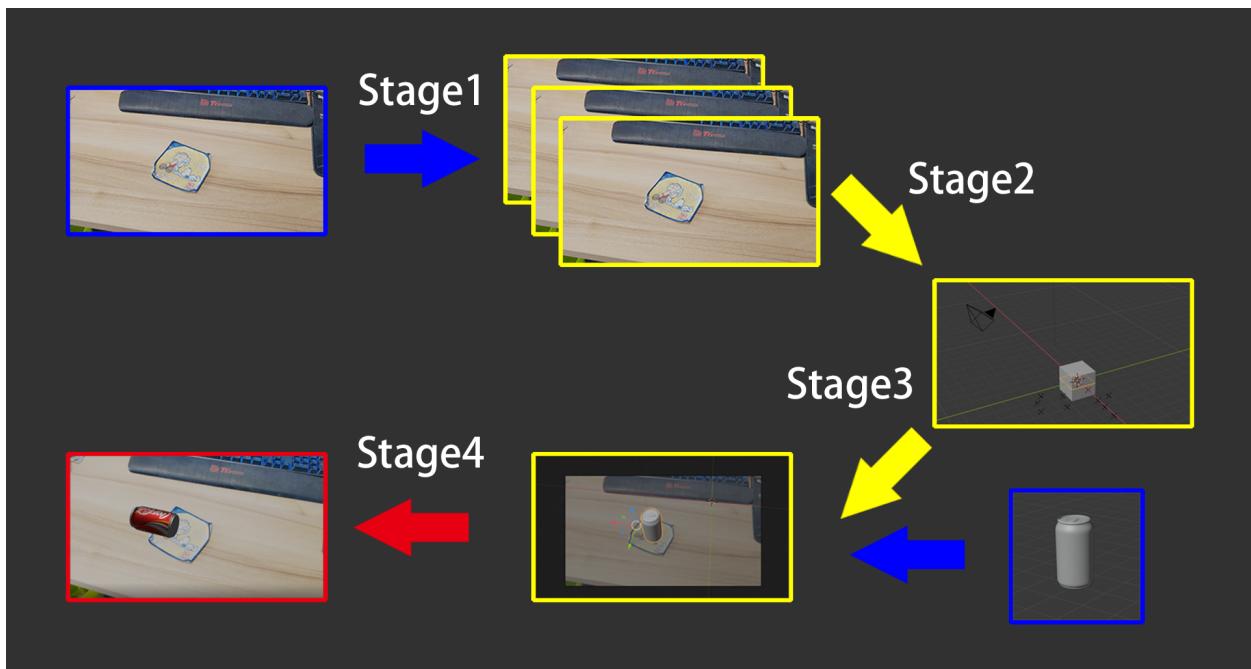
This is the tutorial of “match move” by using Blender 2.80 (it is free !). Here are the reasons why we not using Voodoo+Blender:

1. If the version of Blender is higher than 2.6.6, it might get error while running voodoo python scripts.
2. If the version of Blender is lower than 2.6.6 (released in 2013) and your OS is much newer, there might be some strange bugs.
3. Motion tracking via Blender makes implementation **much easier**.

Environment Setting

- **Blender 2.80**
 - There are some slight UI difference between different versions. Thus, if you want to follow this tutorial step by step, we suggest that you use the same version (2.80).
 - Download link : <https://download.blender.org/release/Blender2.80/>
- **3D models**
 - *.obj, *.3ds

Flow chart



There are 4 main stages:

[Stage 1: Extract Image Sequence](#)

[Stage 2: Camera tracking](#)

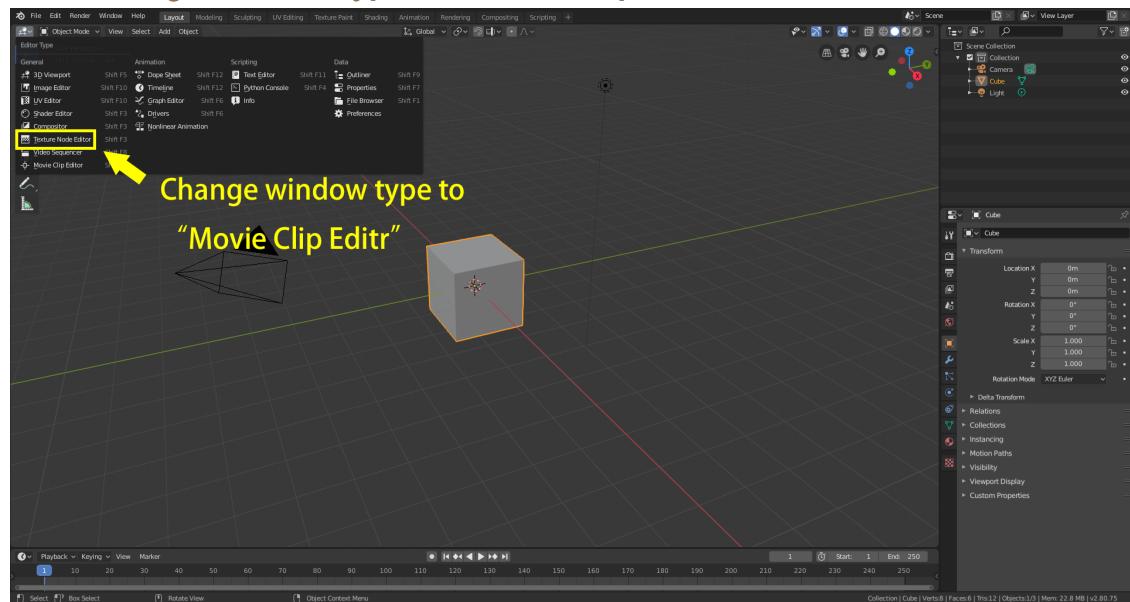
[Stage 3: Import 3D Models](#)

[Stage 4: Output Video](#)

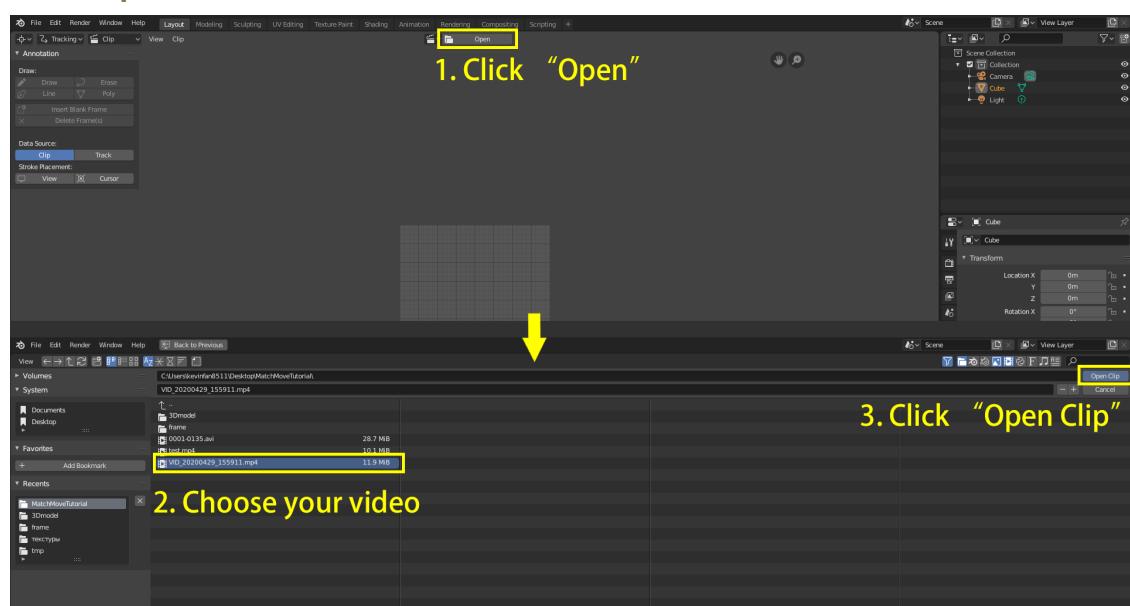
Stage 1: Extract Image Sequence

1. Open Blender
2. Import video file

2.1. Change window type to “Movie Clip Editor”



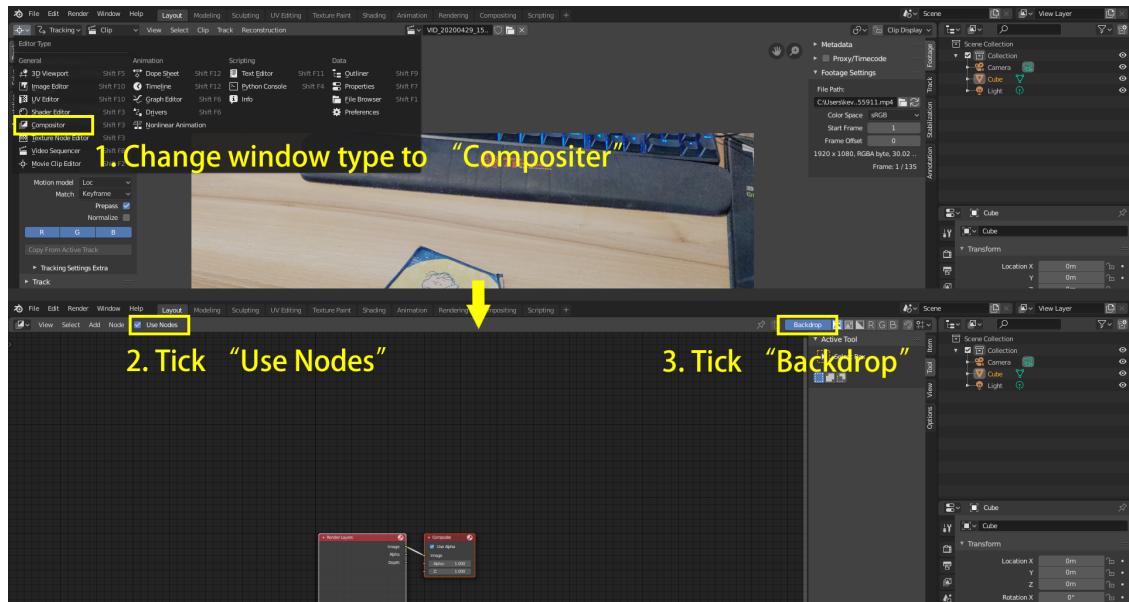
2.2. Import video



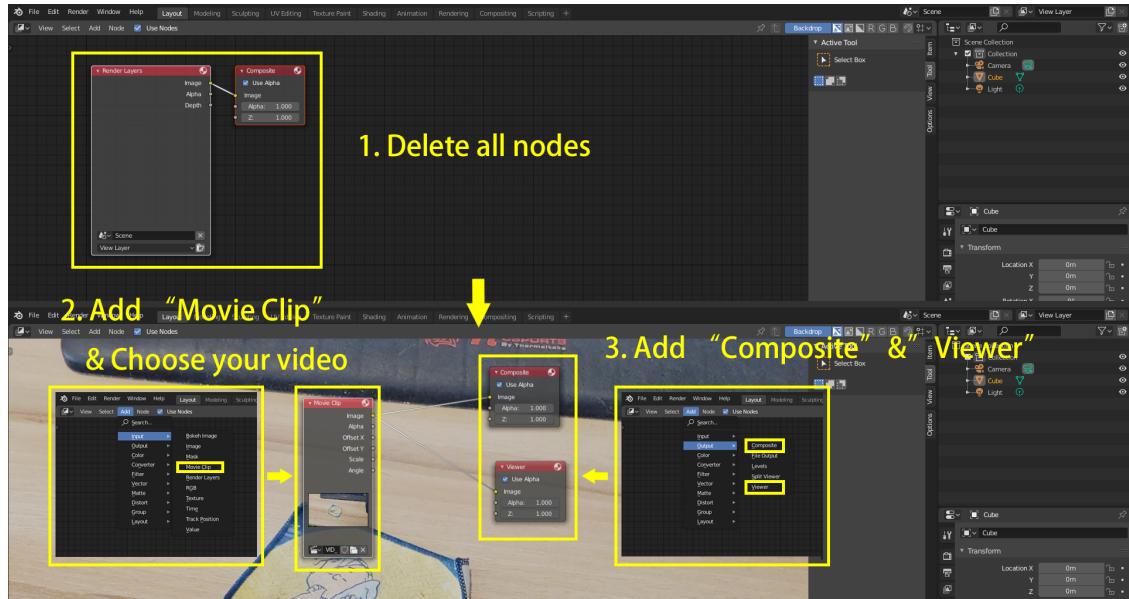
3. Render image sequence

3.1. Change window type to “Compositor”

3.2. Tick “Use Node”, “Backdrop”



3.3. Add nodes



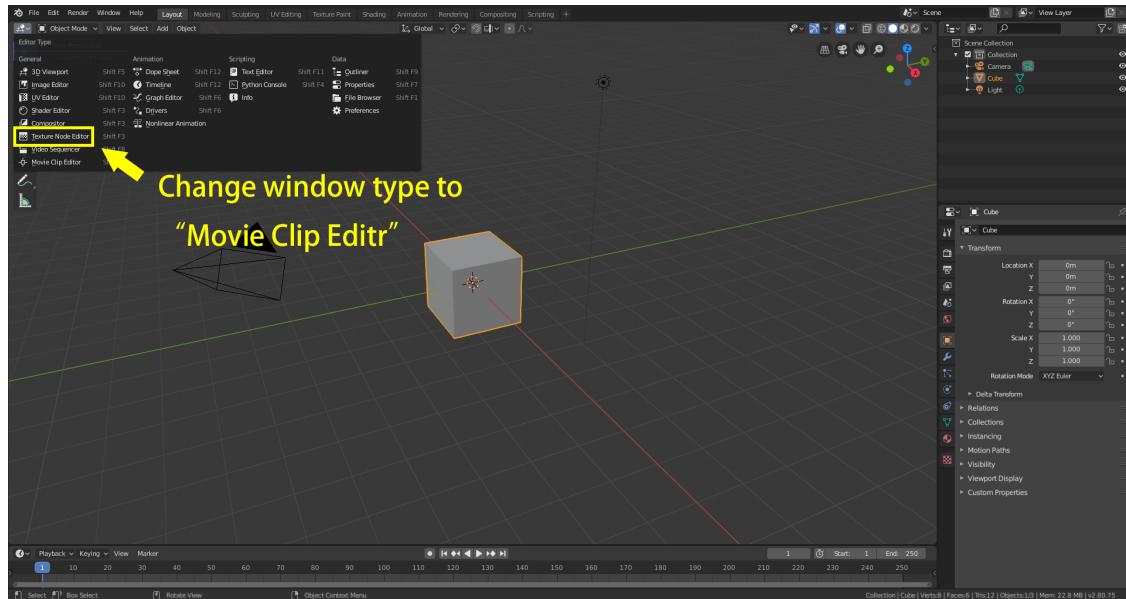
3.4. Set output parameters and render



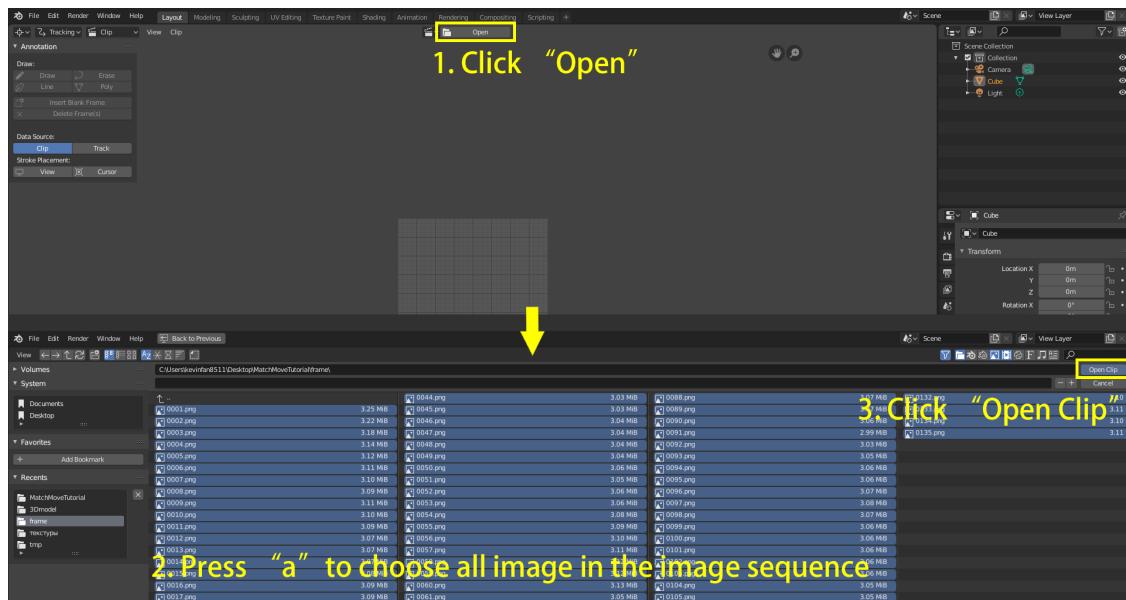
Stage 2: Camera tracking

1. Open a new Blender file
2. Import image sequence

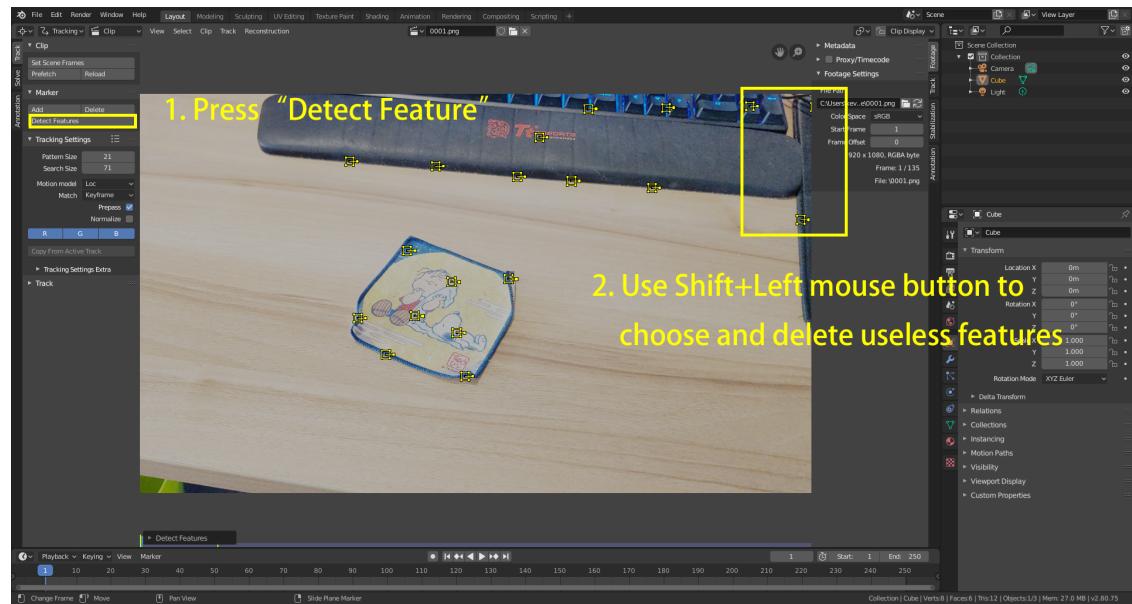
2.1. Change window type to “Movie Clip Editor”



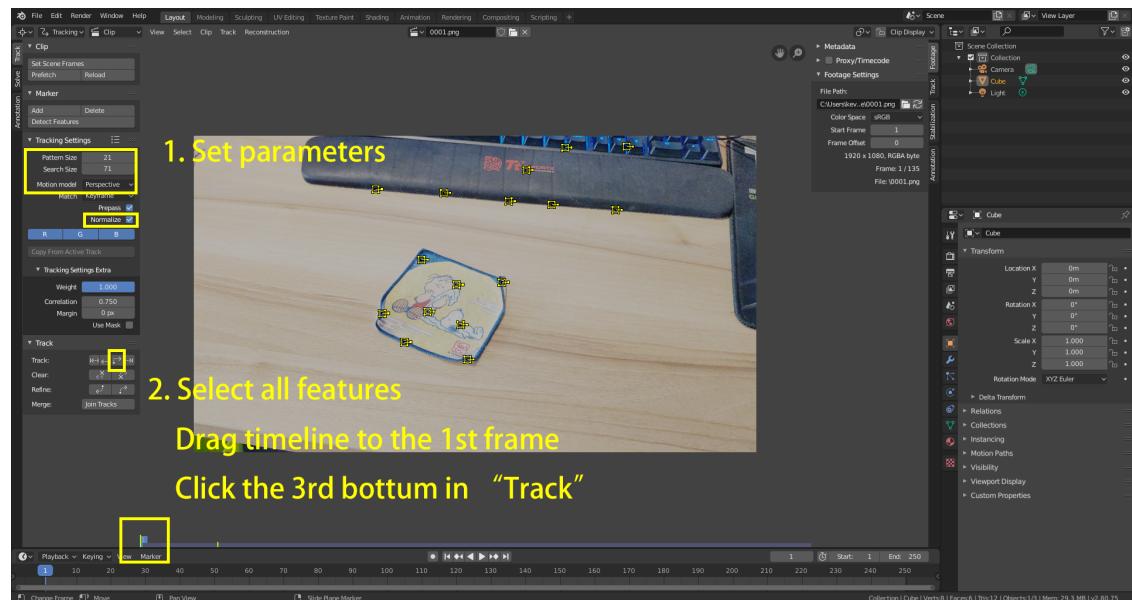
2.2. Import all images in the image sequence



3. Detect feature



4. Track feature



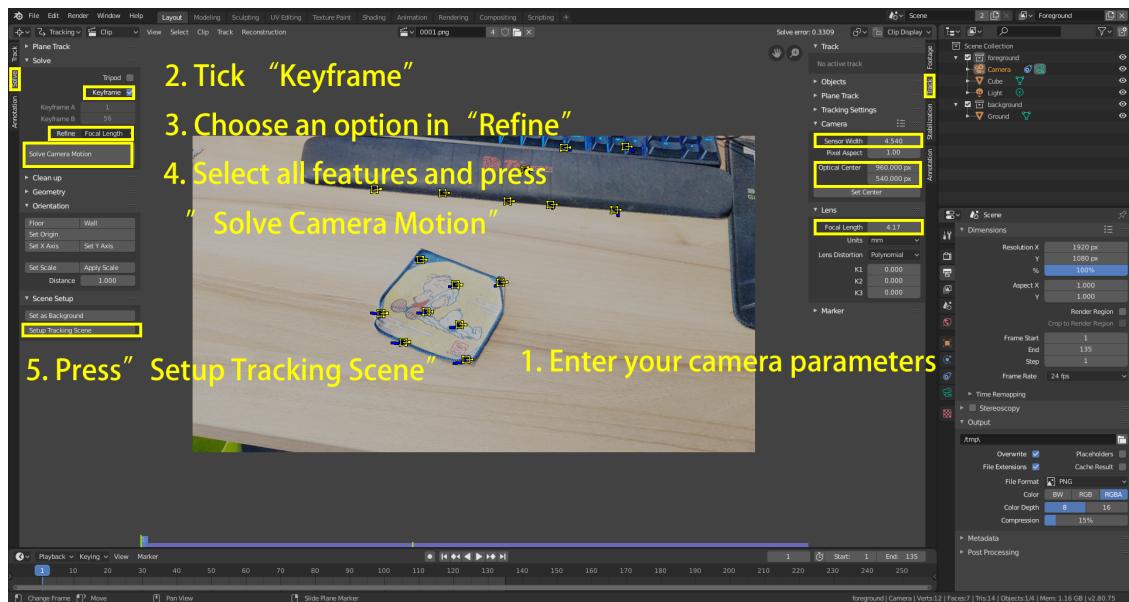
5. Solve Camera motion

5.1. Set camera parameters in “Track” (R.H.S.)

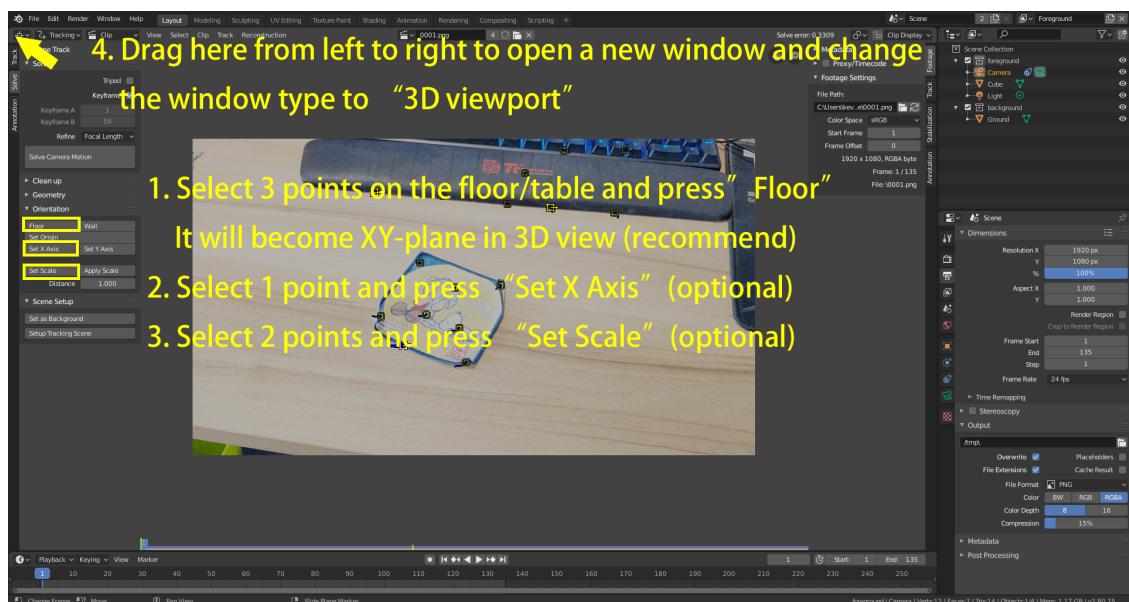
5.2. Tick “Keyframe”

5.3. Set parameters in “Solve” (L.H.S.)

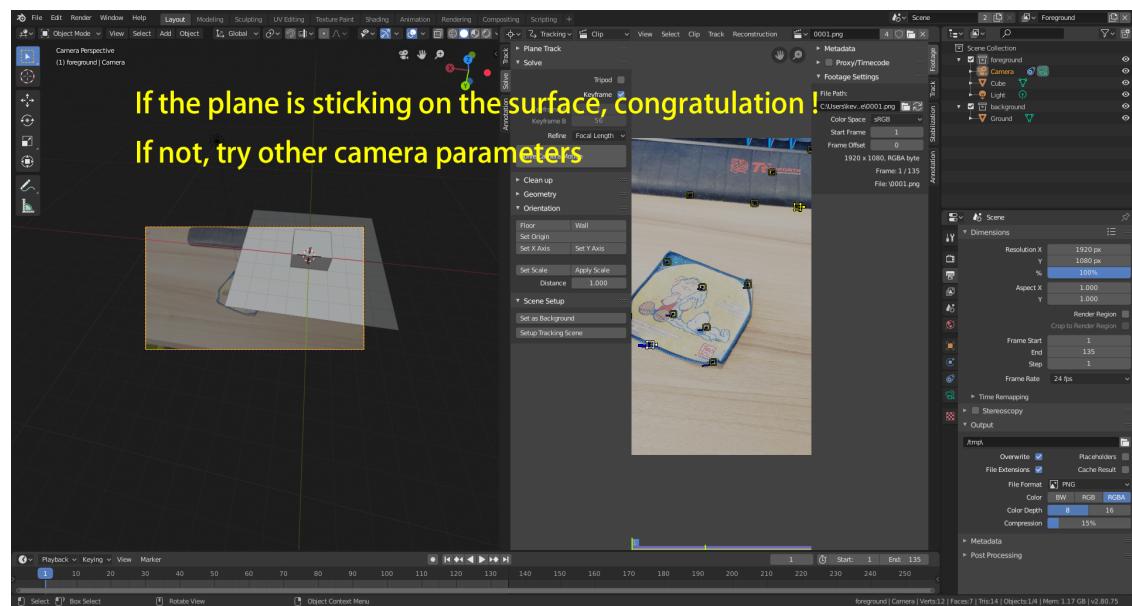
5.4. Solve Camera Motion



5.5. Setup Tracking Scene



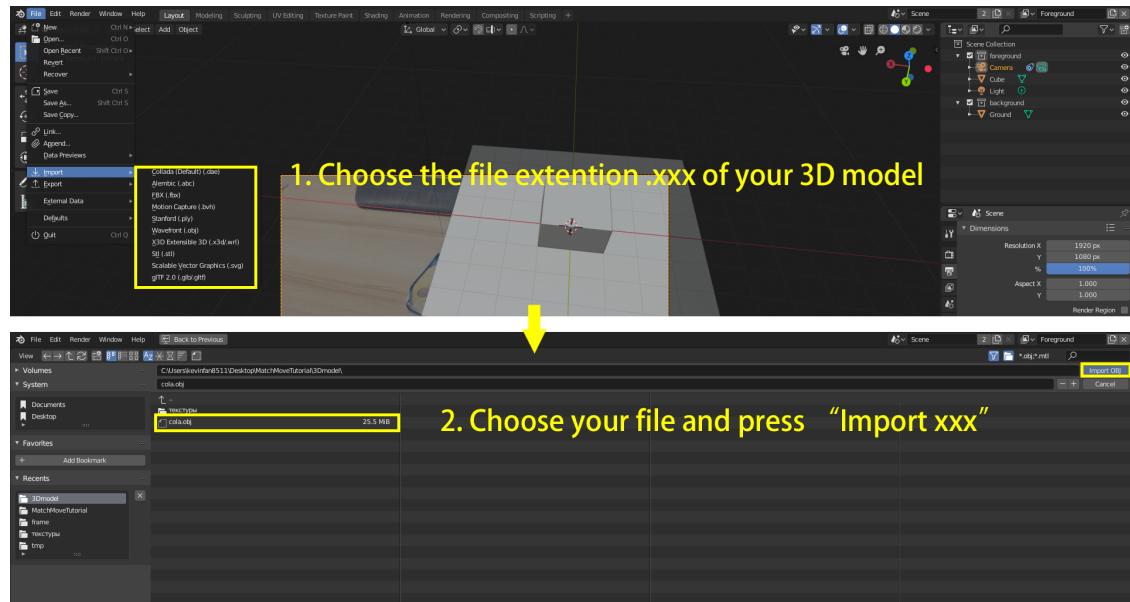
5.6. Check to see if the solver works well (recommend)



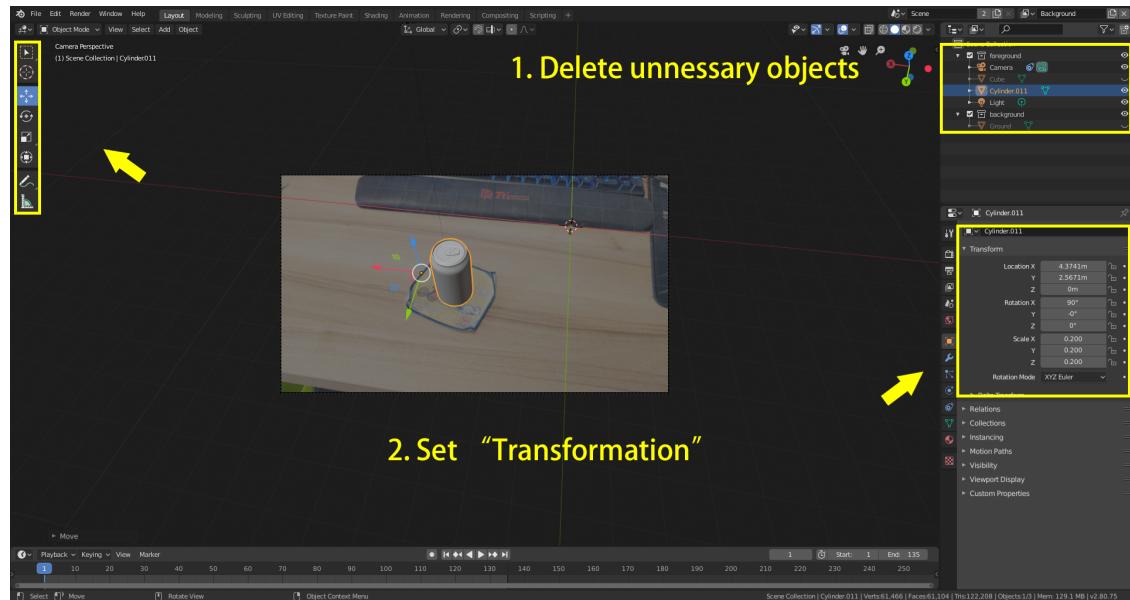
Stage 3: Import 3D Models

1. Import 3D model

1.1. Change window type to “3D Viewpoint” and import your 3D model



2. Place your model



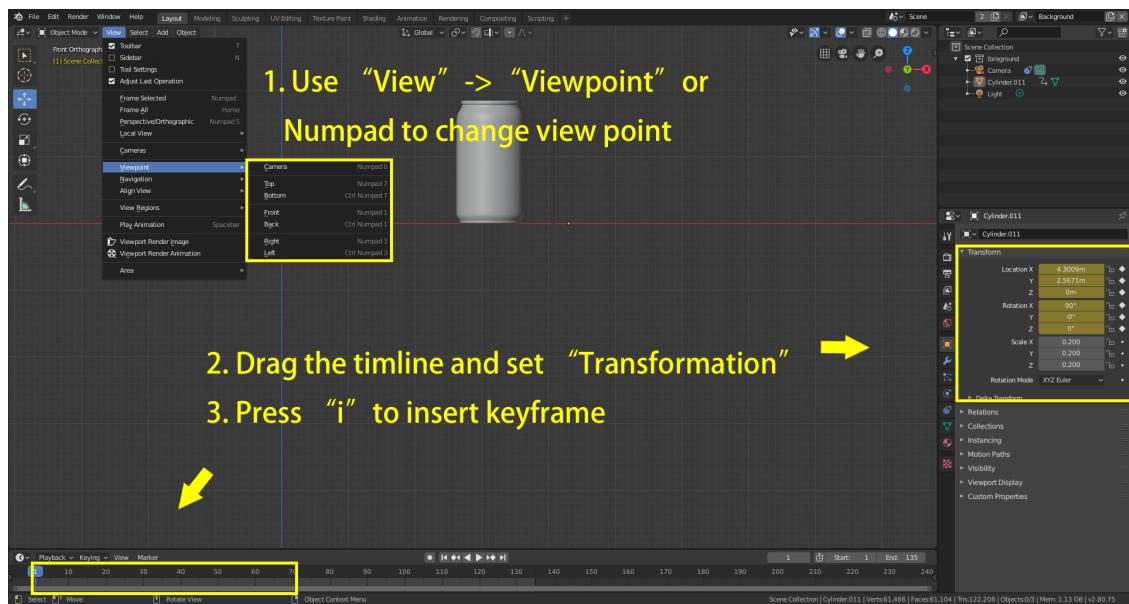
3. Set Model Animation

3.1. Drag “Timeline” to the keyframe

3.2. Set objects

3.3. “Object” → “Animation” → “Insert Keyframe”

3.4. Repeat



Stage 4: Output Video

1. Tick “Render”→“Film”→“Transparent”

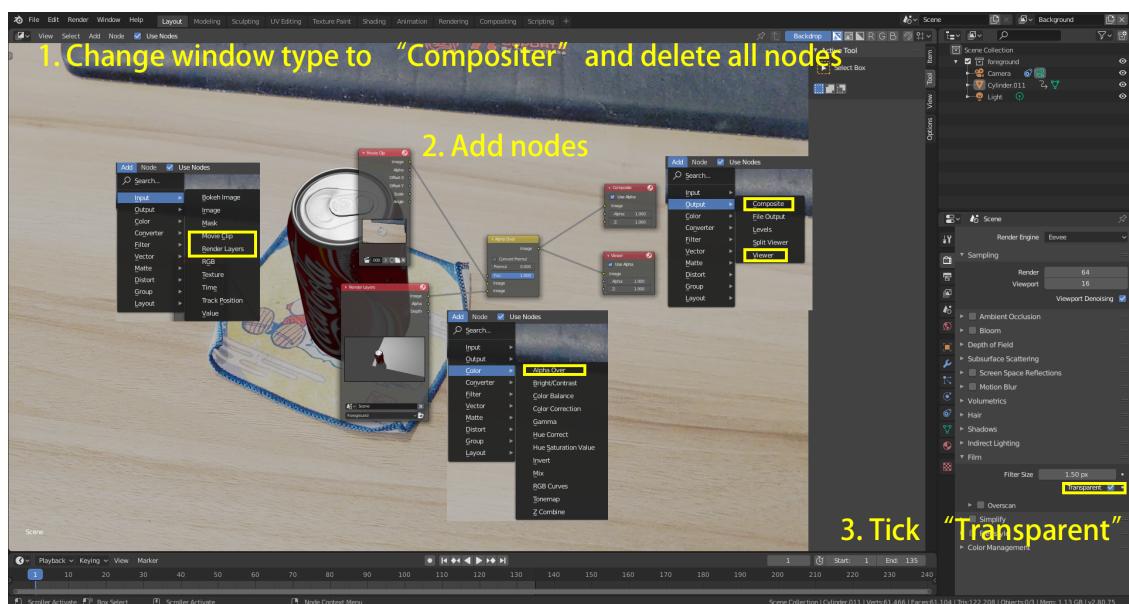
2. Set nodes

2.1. Change window type to “Compositor”

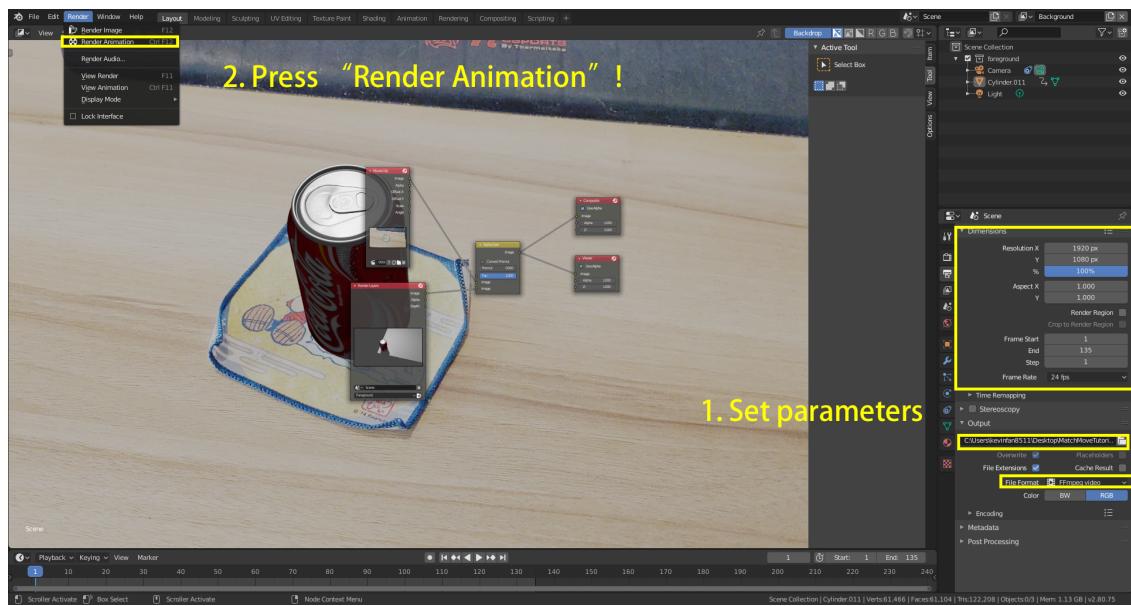
2.2. Delete all nodes

2.3. Add nodes

2.4. Drag the lines



3. Set output parameters and render



Reference

Camera Tracking

- [Blender 2.8 Camera tracking tutorial \(part 1\)](#)
- [Blender 2.8 Camera tracking tutorial \(part 2\)](#)
- Fb 社團 : Blender台灣使用者小聚

Texture

- [Blender: How to Add a Texture – Simply Explained](#)

Animation

- [Blender Tutorial For Beginners: Animation](#)

3D model

- [3DExport: 3D models, CG Textures and models for 3D printing, VR](#)
- <https://www.cgtrader.com>
- <https://www.turbosquid.com>
- <https://assetstore.unity.com/3d>

Some video from students in the past

- <https://www.youtube.com/user/ntuvfx/playlists>