

Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

Computer Games Design / Computer Games Development
Dylunio Gemau Cyfrifiadurol / Datblygu Gemau Cyfrifiadurol

Indie Game Development
Datblygu Gemau Annibynnol

MetaHuman Creation
Creu MetaHuman

Aim:

-Introduce Unreal Engine MetaHuman Creator, it's applications in modern game development and animation, and to develop practical skills in creating, importing, and setting up a MetaHuman as a playable character.

Outcomes:

-Define what a MetaHuman is and explain its purpose in Unreal Engine.

-Identify advantages and limitations of using MetaHumans in game development.

-Evaluate whether a MetaHuman is appropriate for their own independent game project.

-Create a MetaHuman using MetaHuman Creator.

-Set up a MetaHuman as a playable character within an Unreal project.

MetaHuman Creation

Creu MetaHuman

Lecture Contents

Cynnwys y Ddarlith

1. What is a MetaHuman?
2. Pros & Cons of MetaHuman Use
3. MetaHuman Creator
4. MetaHuman Practical
5. Importing to Unreal Engine
6. Making the MetaHuman Playable

Computer Games Design & Computer Games Development

Dylunio Gemau Cyfrifiadurol a Datblygu Gemau Cyfrifiadurol

What is a MetaHuman?

Beth yw MetaHuman?

What is a MetaHuman?

- A digital human powered by Unreal Engine.
- High fidelity digital characters.
- Fully rigged (Body and Facial).
- 8 Levels of Detail (From low to cinematic quality).
- Highly customisable.
- Not limited to Unreal Engine.
- Motion capture compatibility.



Examples of Media using MetaHumans



Computer Games Design & Computer Games Development

Dylunio Gemau Cyfrifiadurol a Datblygu Gemau Cyfrifiadurol

Pros & Cons of MetaHuman use

Manteision ac Anfanteision Defnyddio MetaHuman

MetaHuman Creation - Creu MetaHuman

Pros ✓

- Extreme realism out of the box.
- Highly efficient.
- Easy integration with UE5.
- Highly customisable (Great for base meshes).
- Good learning tool.

Cons ✘

- Limited artistic control.
- Heavy performance cost.
- Not production ready for all games.
- Character similarity fatigue.

Does your project need MetaHumans?

- Is realism or stylisation the main art direction?
- Are the characters main heroes or background NPCs?
- Is real time performance a priority?
- Is speed more important than originality?
- Does the team have a character artist that can sculpt characters?
- Is optimisation time available?

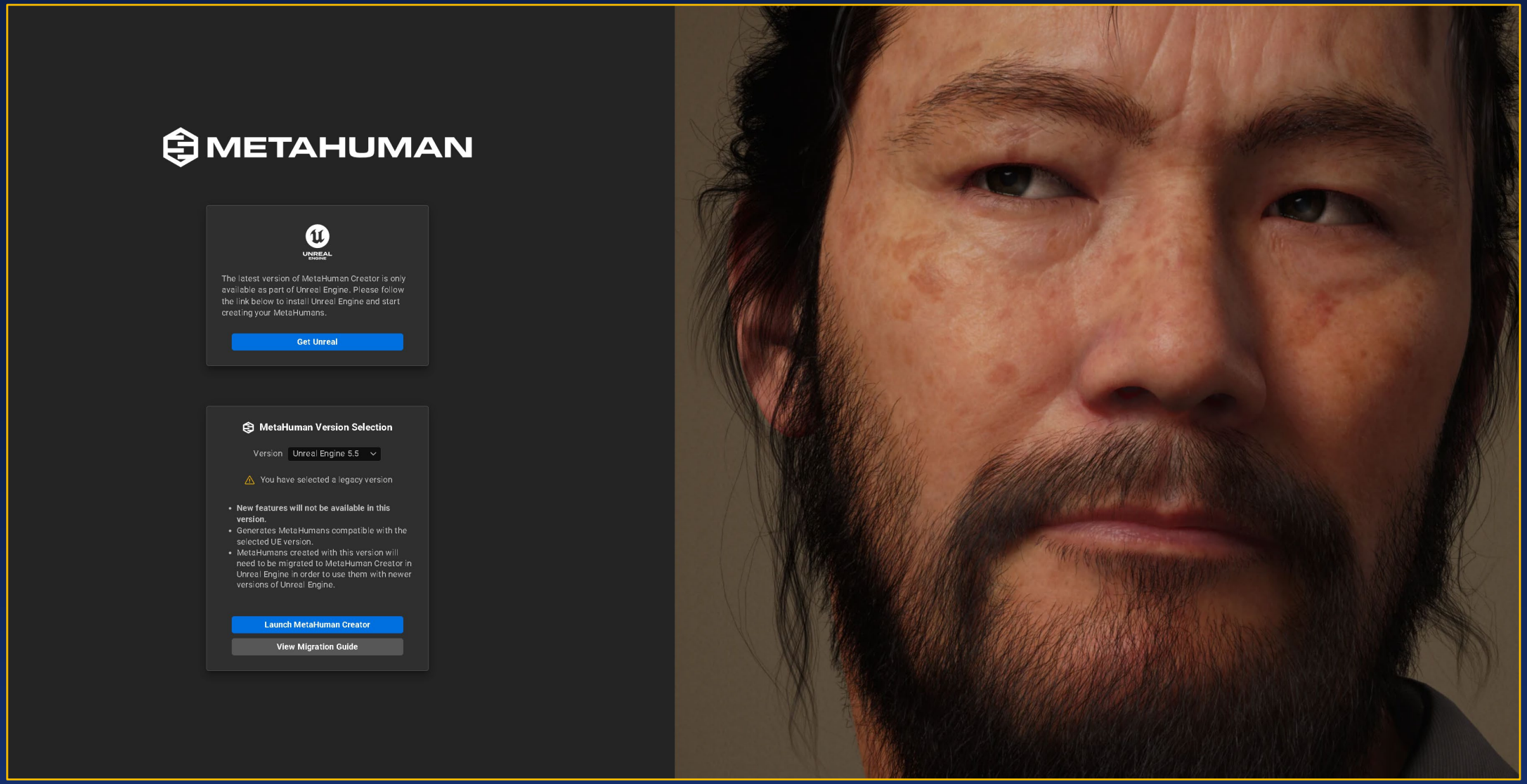


Computer Games Design & Computer Games Development

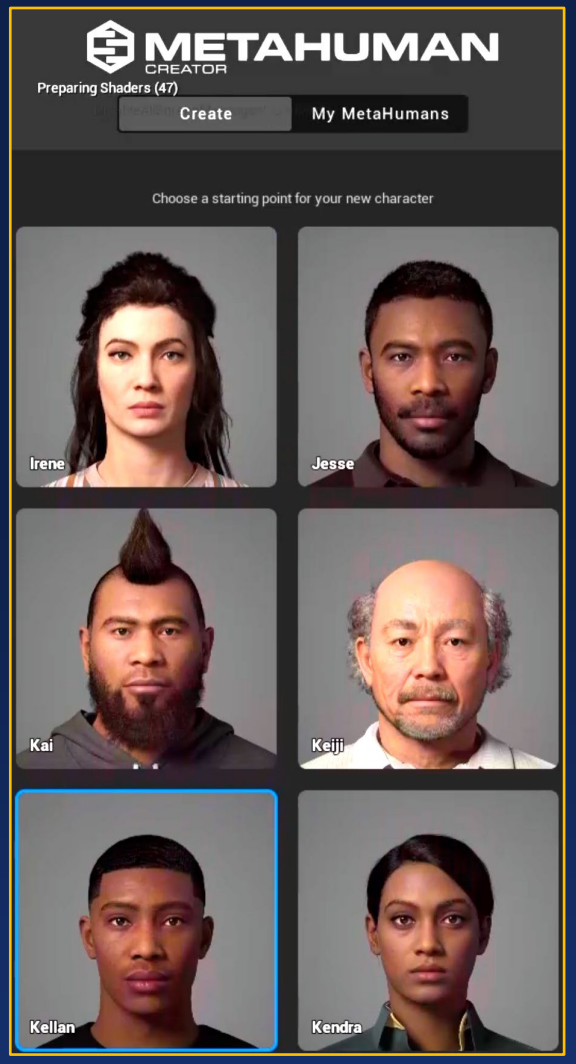
Dylunio Gemau Cyfrifiadurol a Datblygu Gemau Cyfrifiadurol

MetaHuman Creator

Metahuman creator



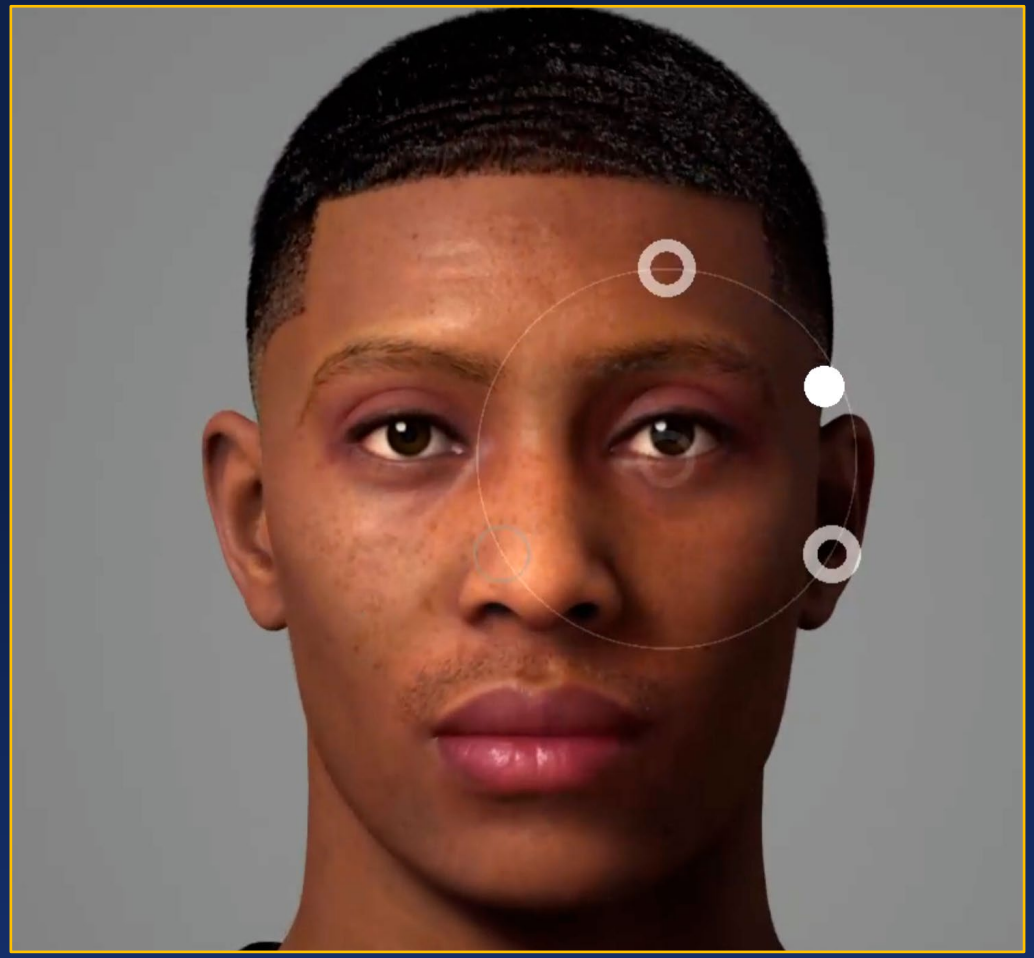
Starting in MetaHuman Creator





Blend Edit


BLEND
Studio
Auto
Medium
LOD 0
PRESETS
Idle
Face ROM
Body ROM
Happy A
Surprise



Sculpt Edit



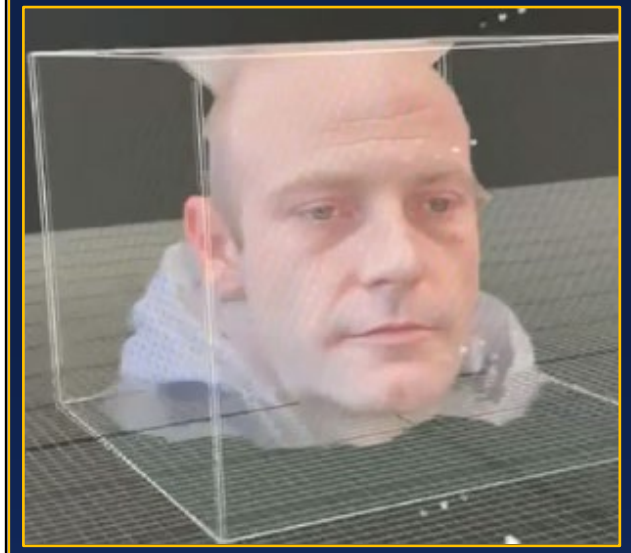


Move Edit



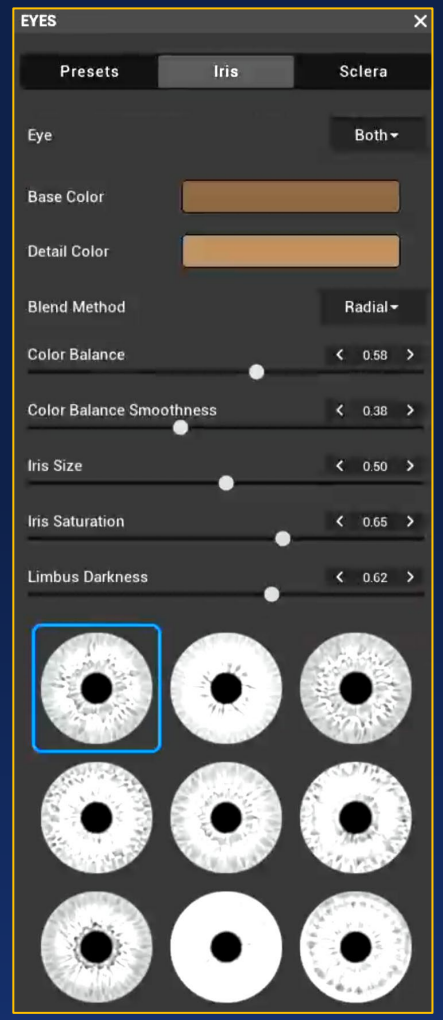


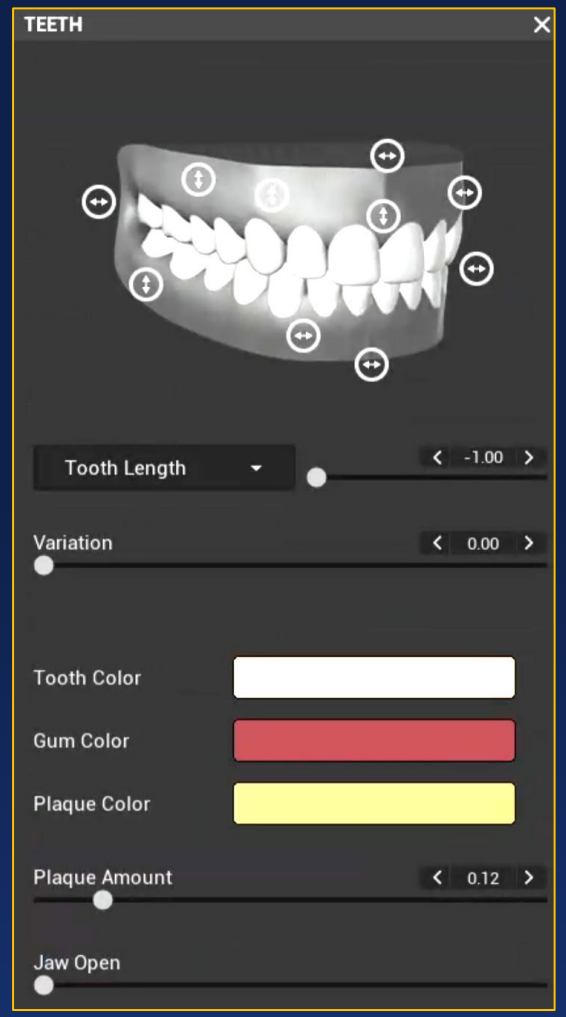
Photogrammetry Edit

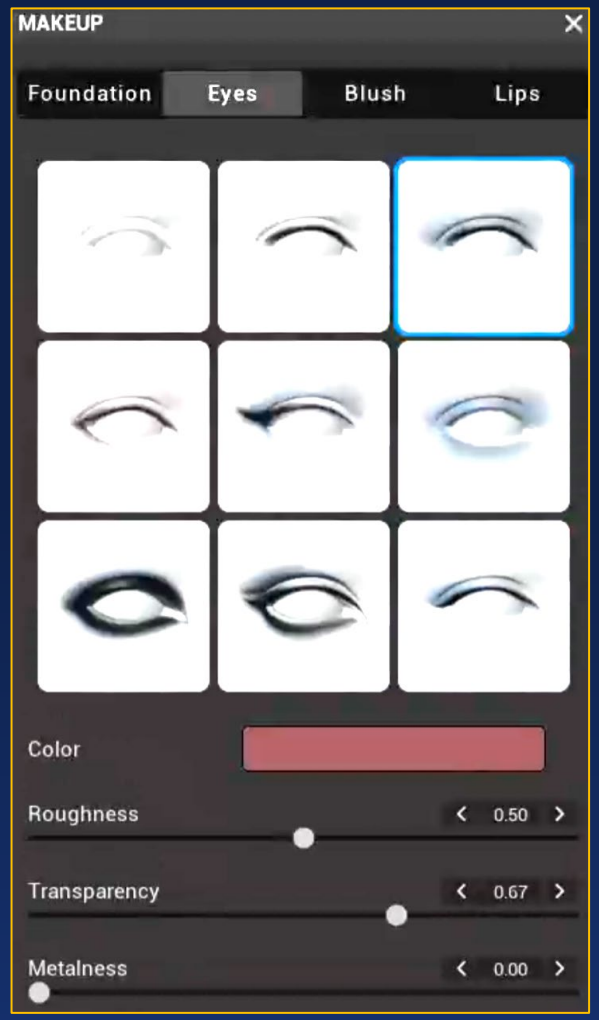


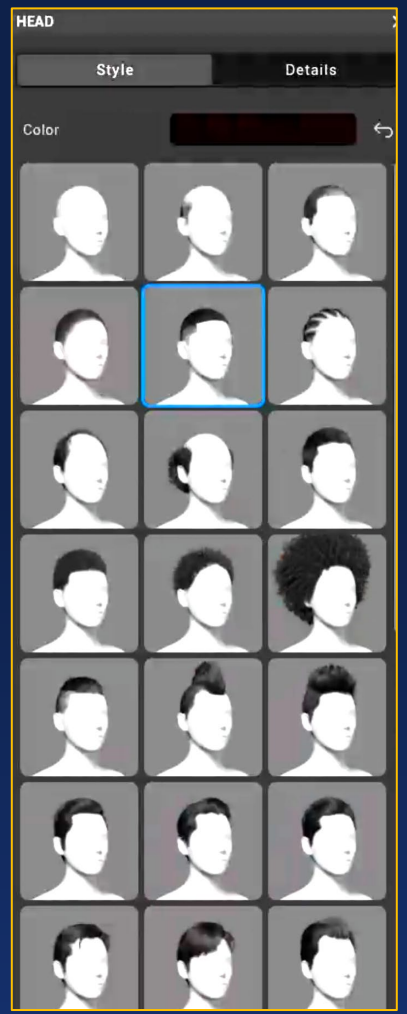


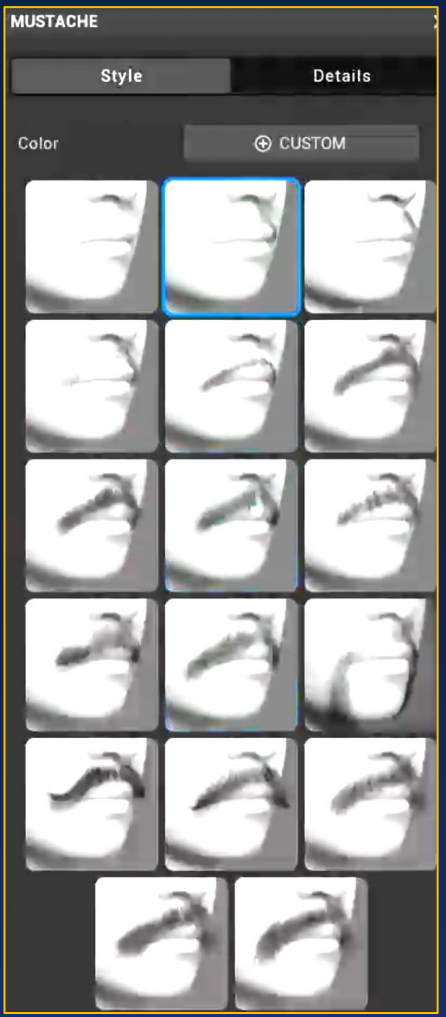

Hair & Face Edit





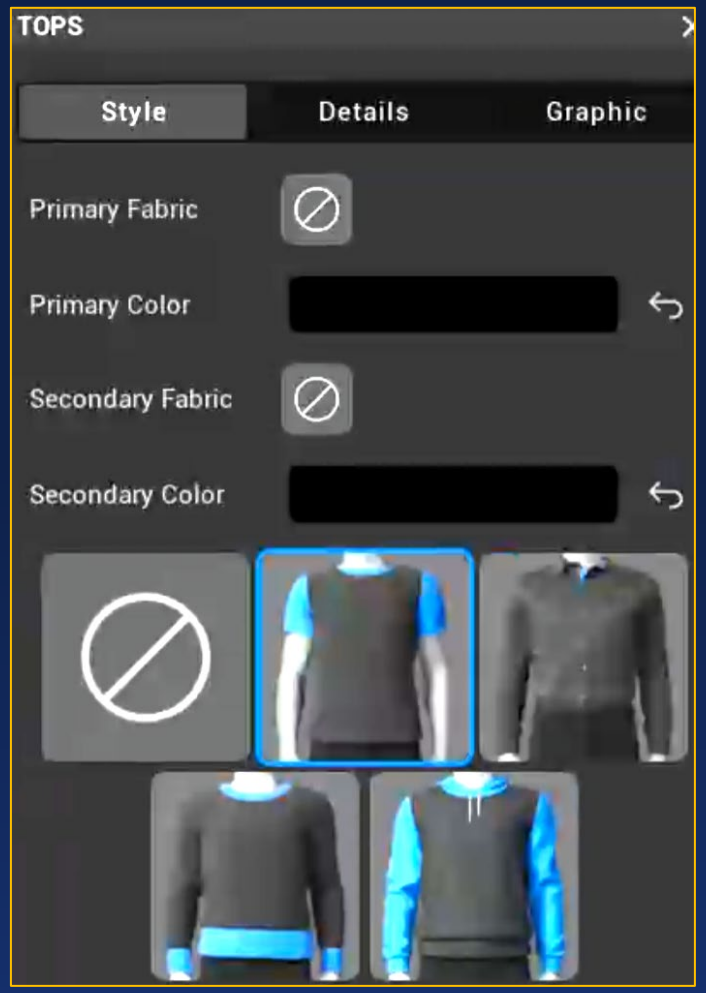


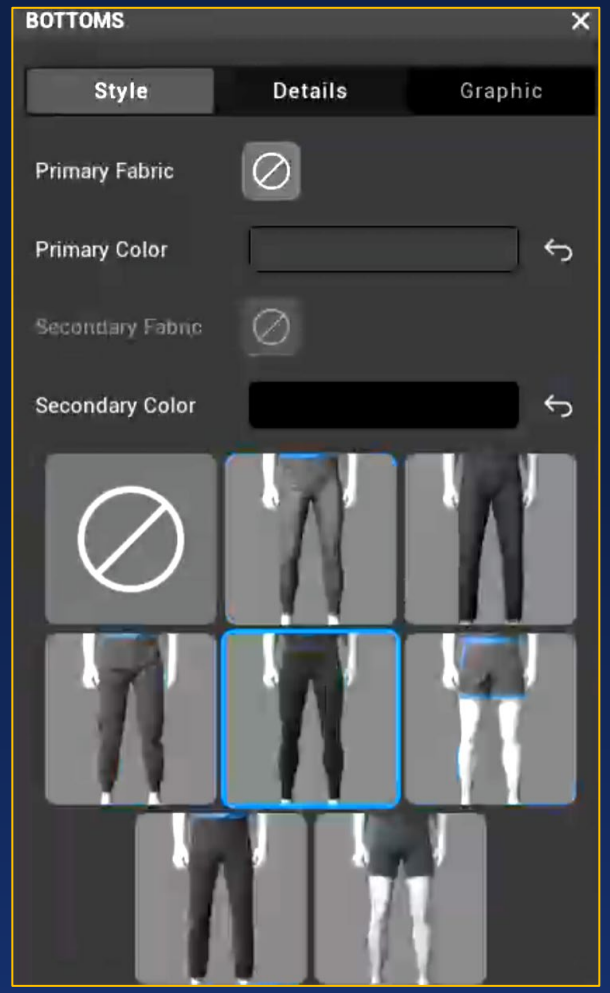


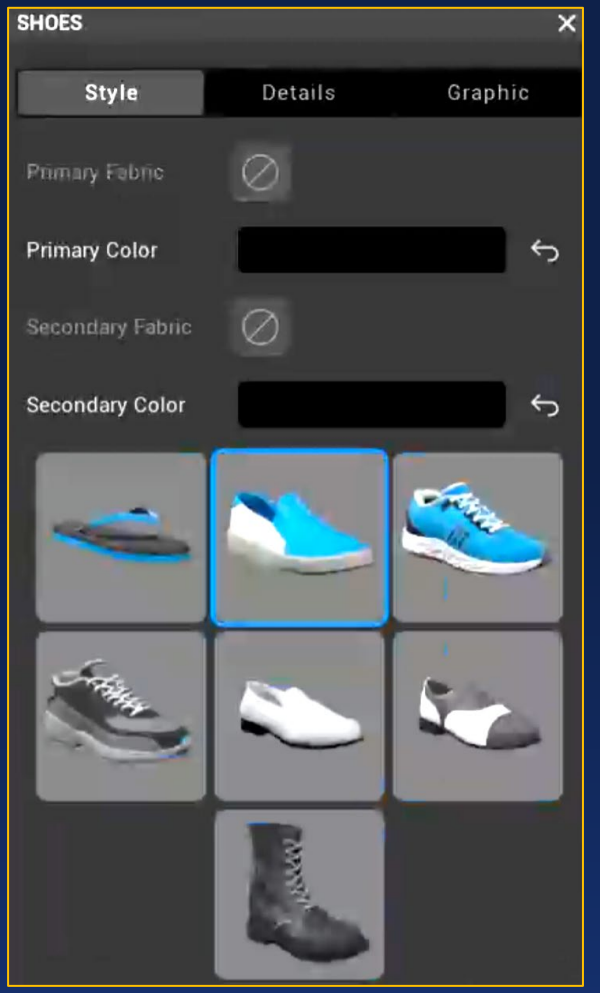


Body & Clothing Edit









Industry Practice







Computer Games Design & Computer Games Development

Dylunio Gemau Cyfrifiadurol a Datblygu Gemau Cyfrifiadurol

MetaHuman Practical Session

Ymarfer Ymarferol MetaHuman

Practical Task

- In pairs (Preferably 1 Game Developer + 1 Game Designer).
- Load up https://metahuman.unrealengine.com/
- Spend some time creating your own MetaHuman.
- Try to make your character as believable as possible (NO ABOMINATIONS).



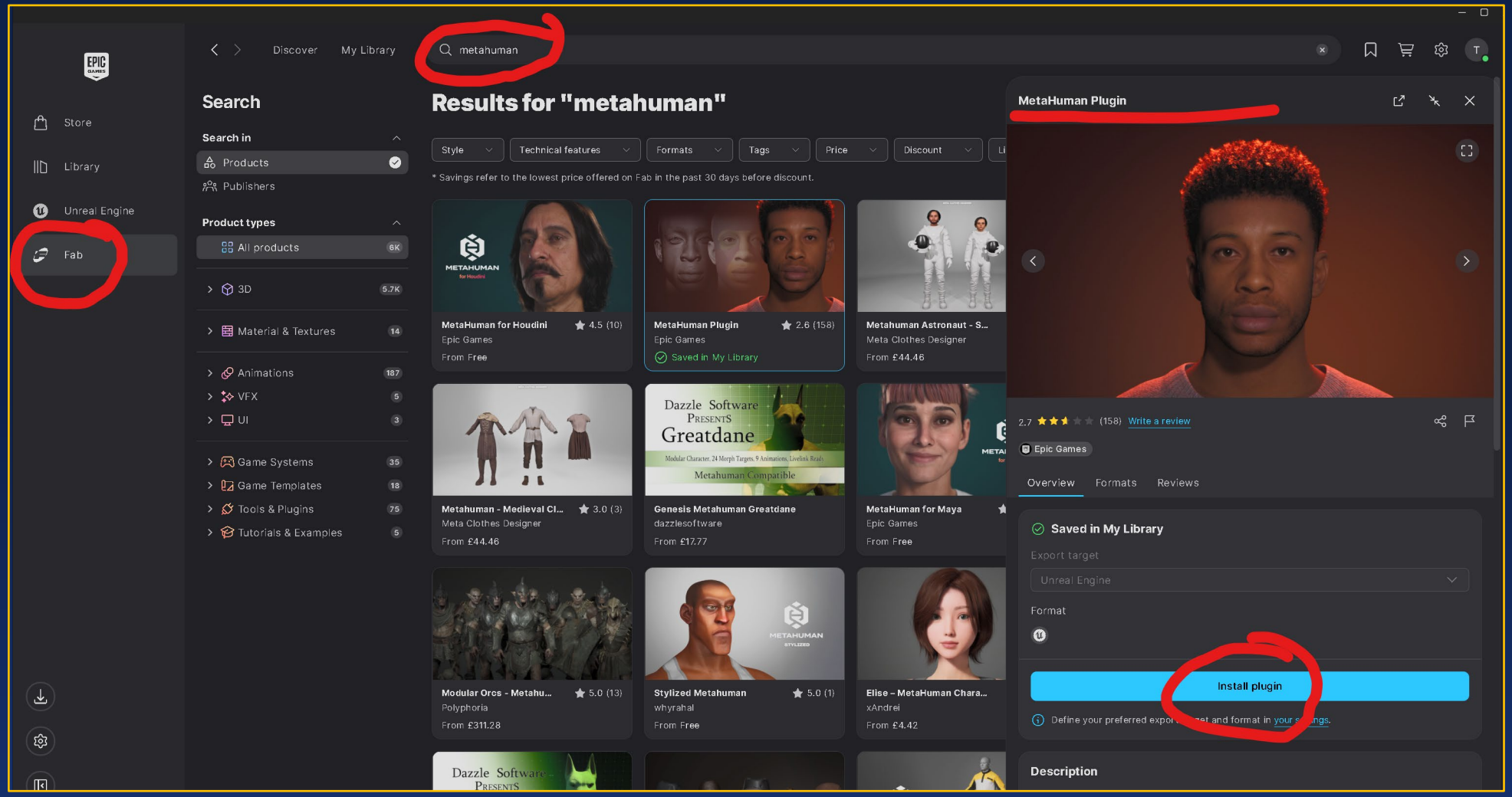
Computer Games Design & Computer Games Development

Dylunio Gemau Cyfrifiadurol a Datblygu Gemau Cyfrifiadurol

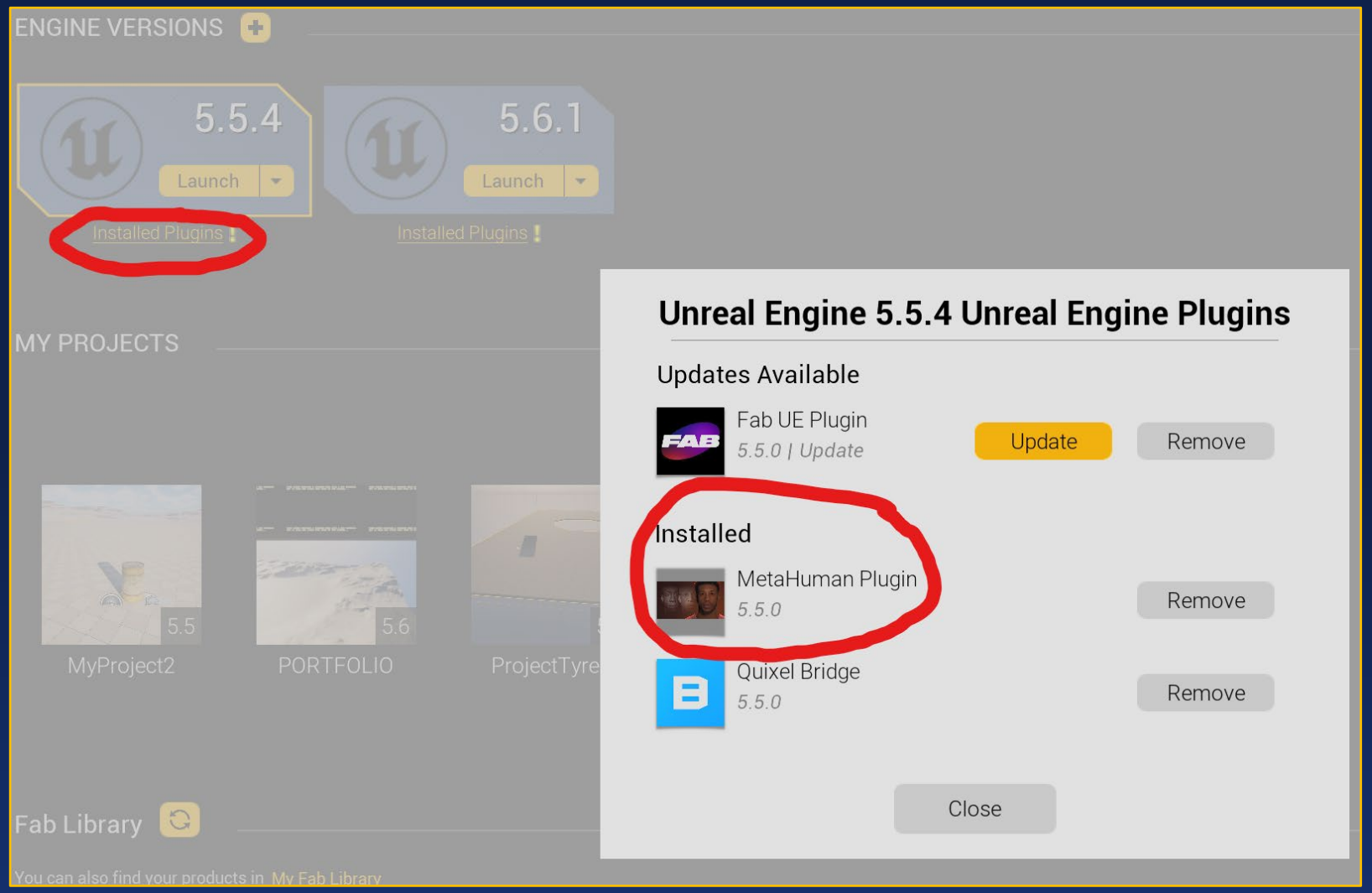
Importing to Unreal Engine

Mewnforio i Unreal Engine

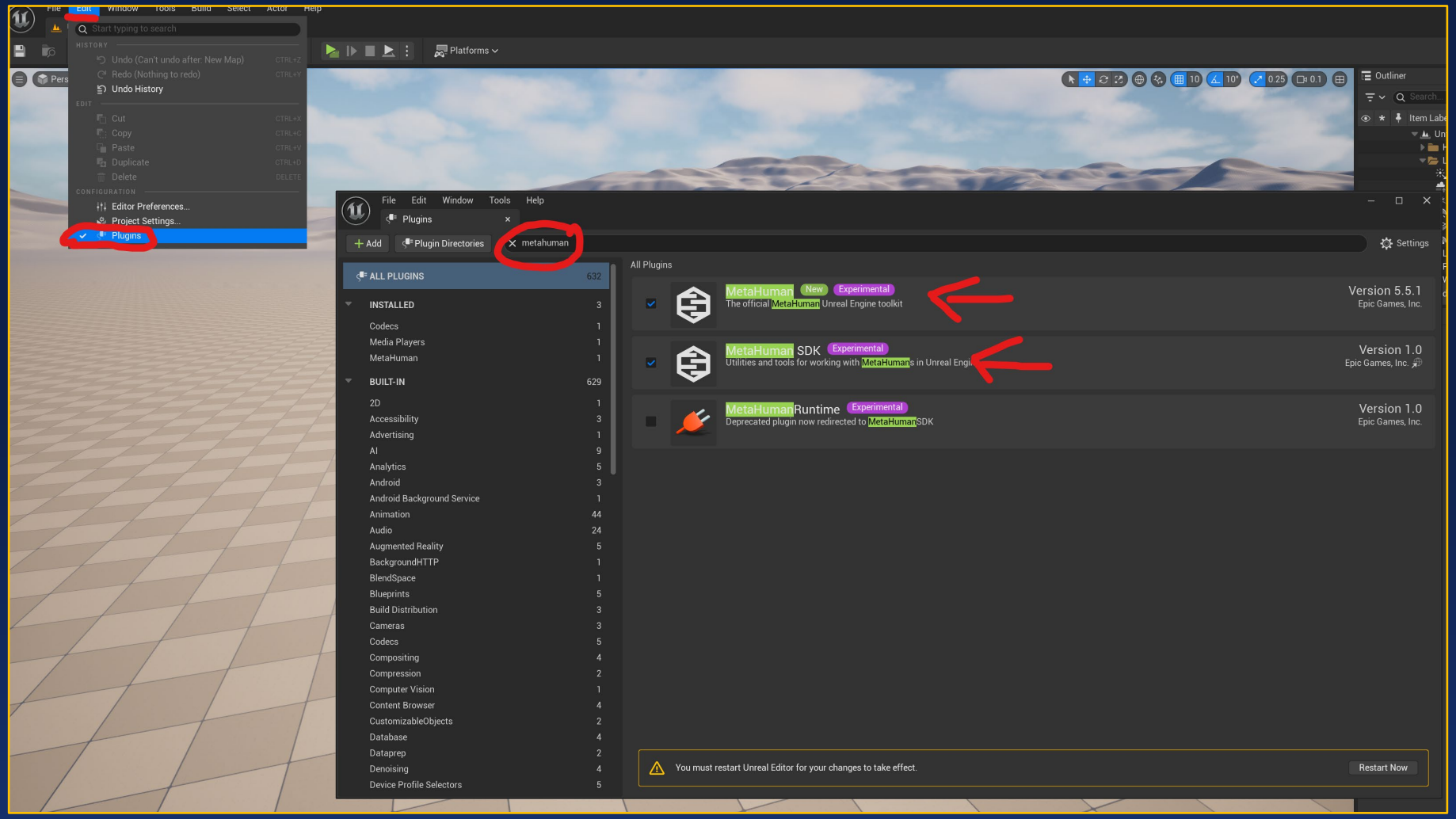
Install MetaHuman + Plugins (UNREAL ENGINE 5.5 and under***)



Install MetaHuman + Plugins (UNREAL ENGINE 5.5 and under***)

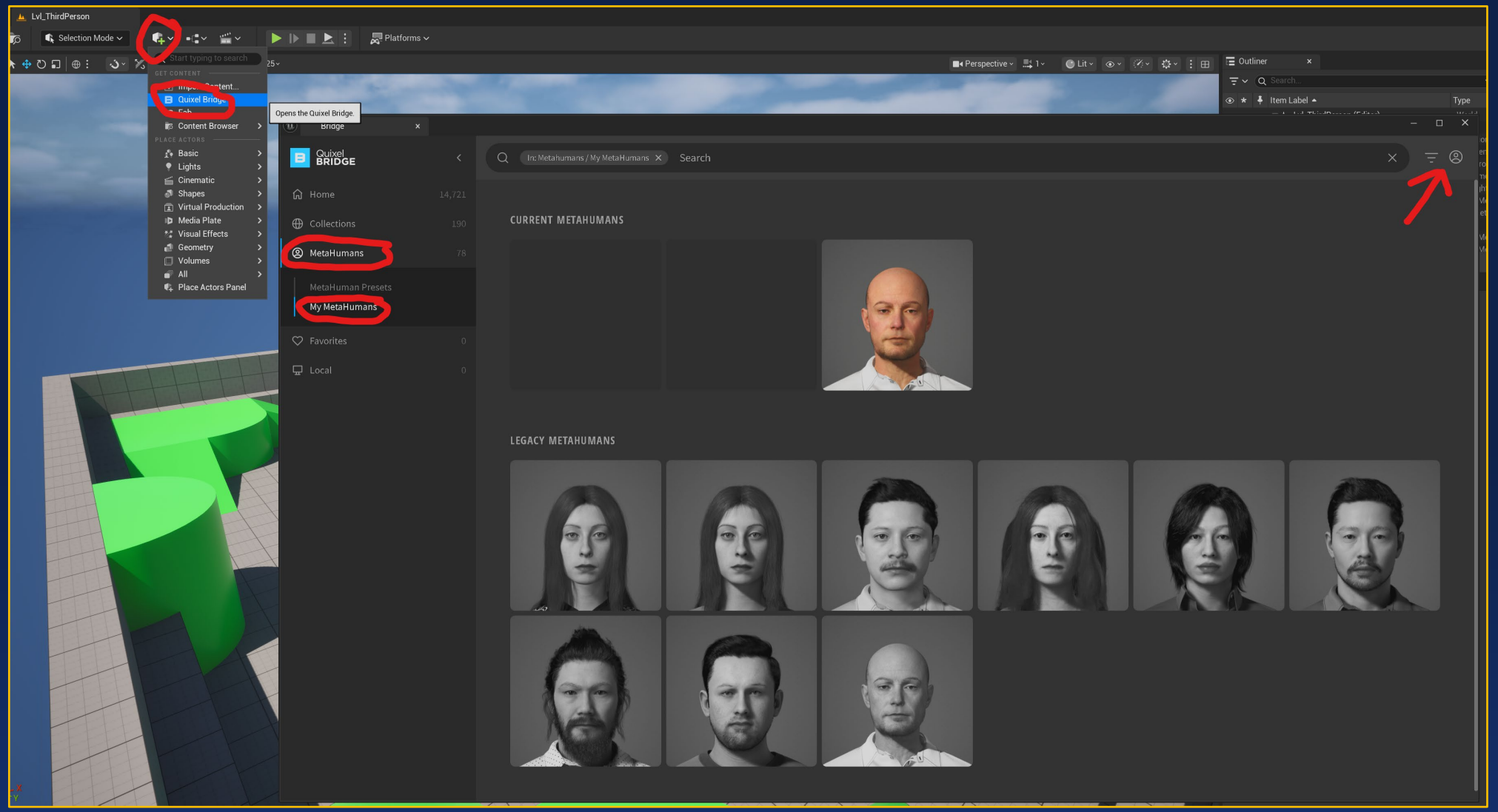


Install MetaHuman + Plugins (UNREAL ENGINE 5.5 and under***)



Quixel Bridge

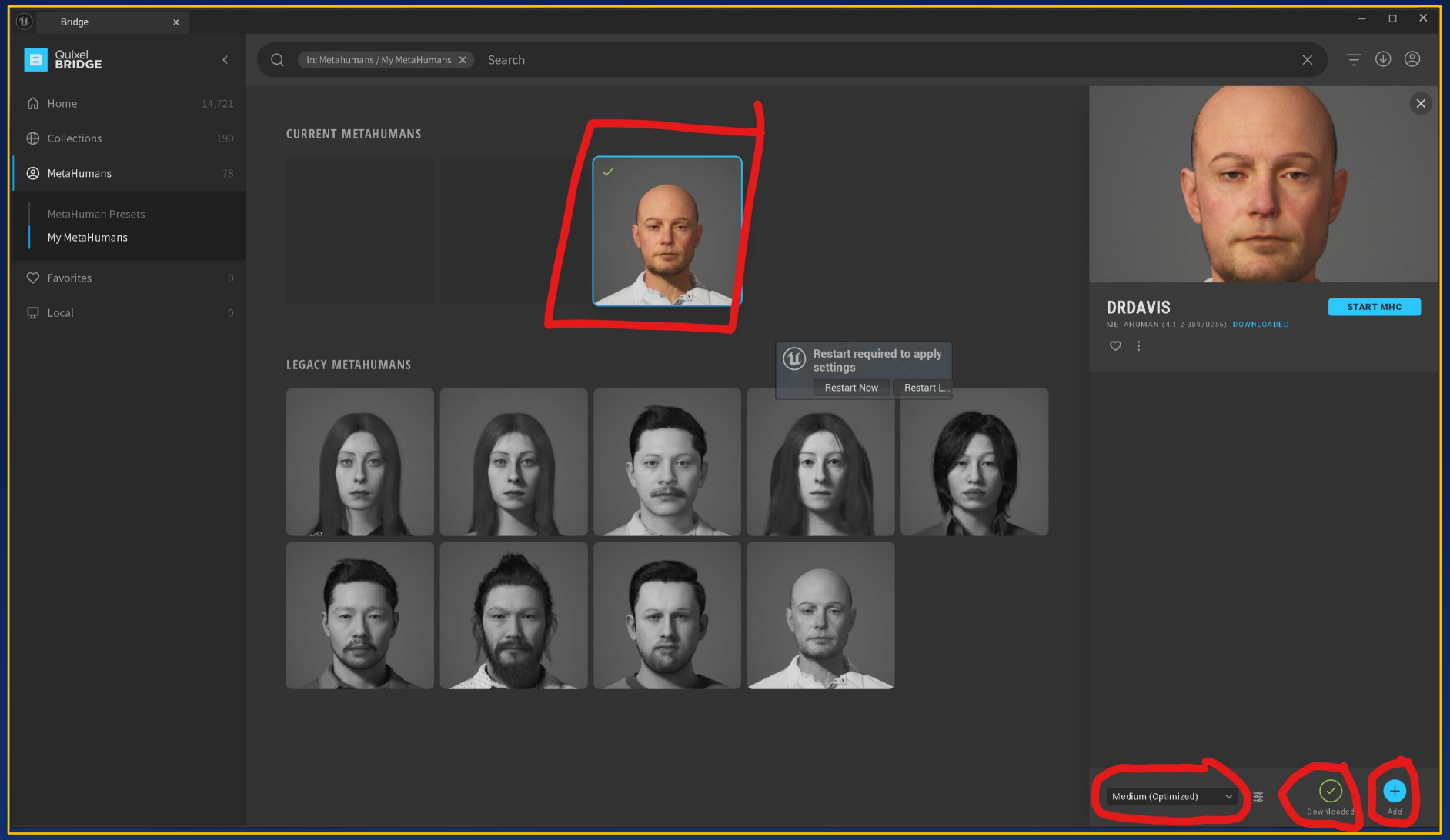
1. Add to project.
2. Quixel bridge.
3. Log in to quixel bridge.
4. MetaHumans.
5. My MetaHumans.



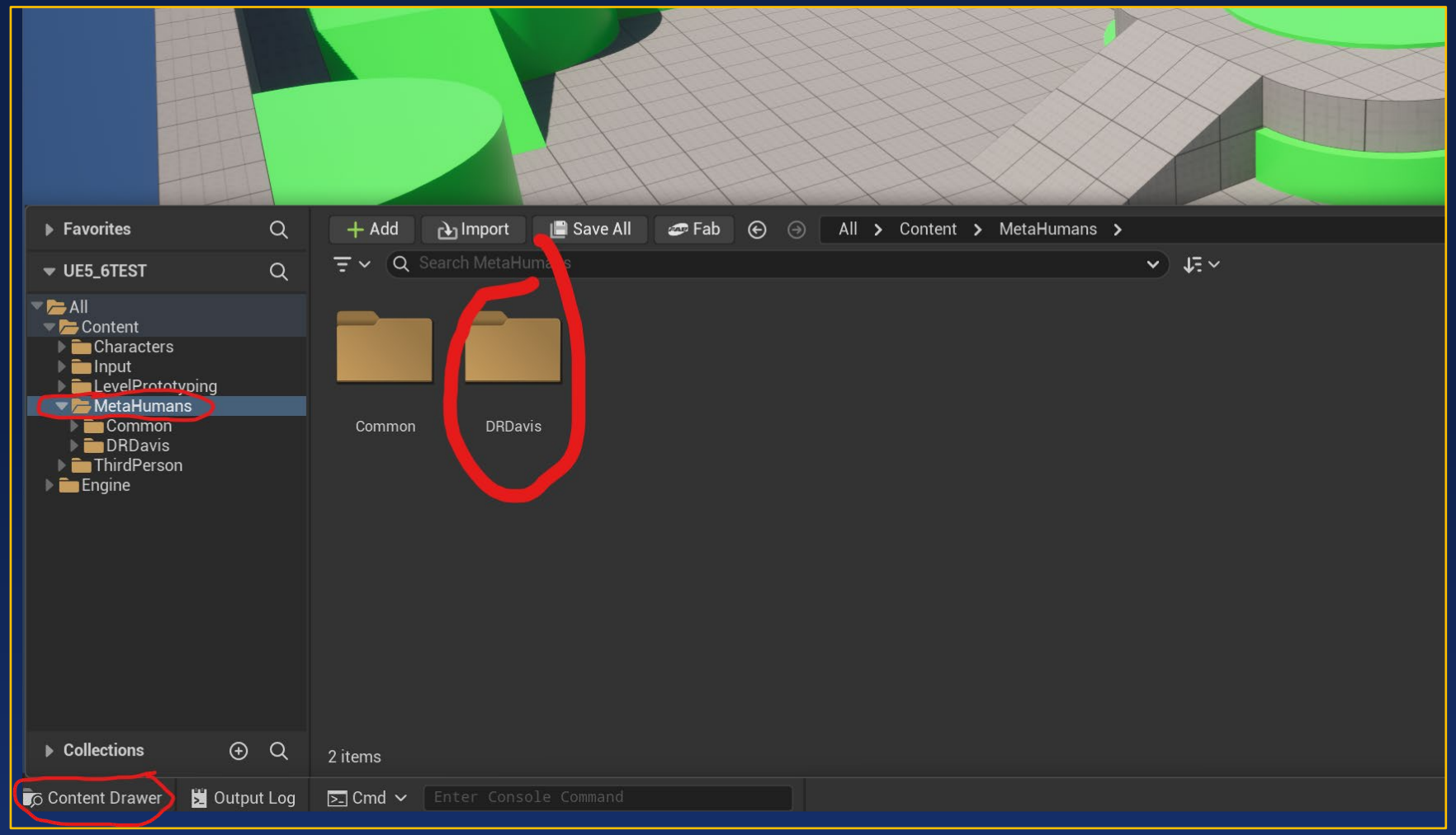
Importing your MetaHuman

1. Select your Metahuman.
2. Choose a quality (Select Medium or Low).
3. Select Download.
4. Select Add once the download has finished.

(After downloading, enable any missing plugins).



You'll now find your MetaHuman in your content drawer.



Computer Games Design & Computer Games Development

Dylunio Gemau Cyfrifiadurol a Datblygu Gemau Cyfrifiadurol

Making the MetaHuman Playable

Galluogi'r MetaHuman i'w chwarae

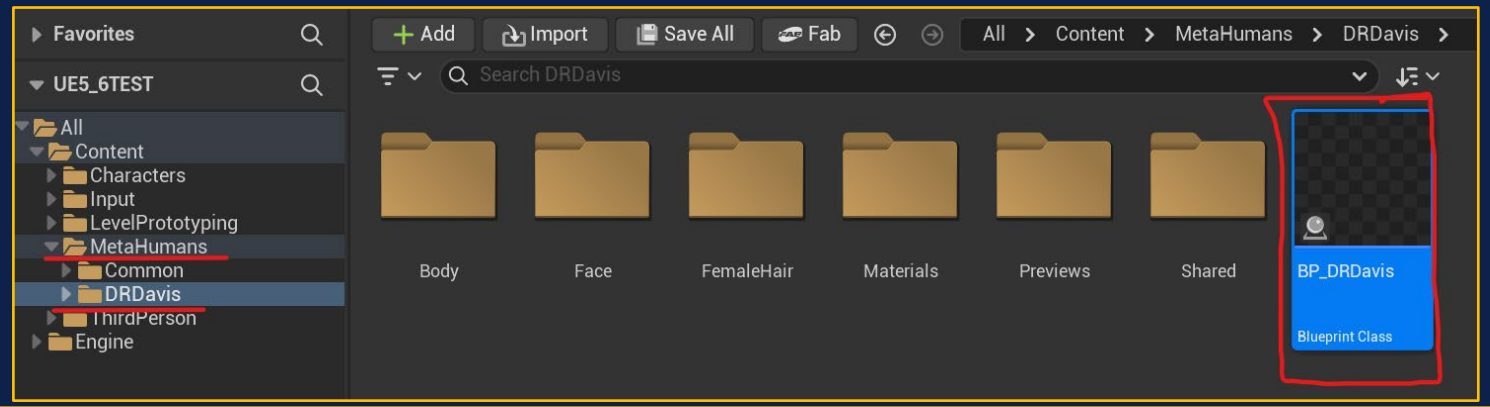
Troubleshooting LODs

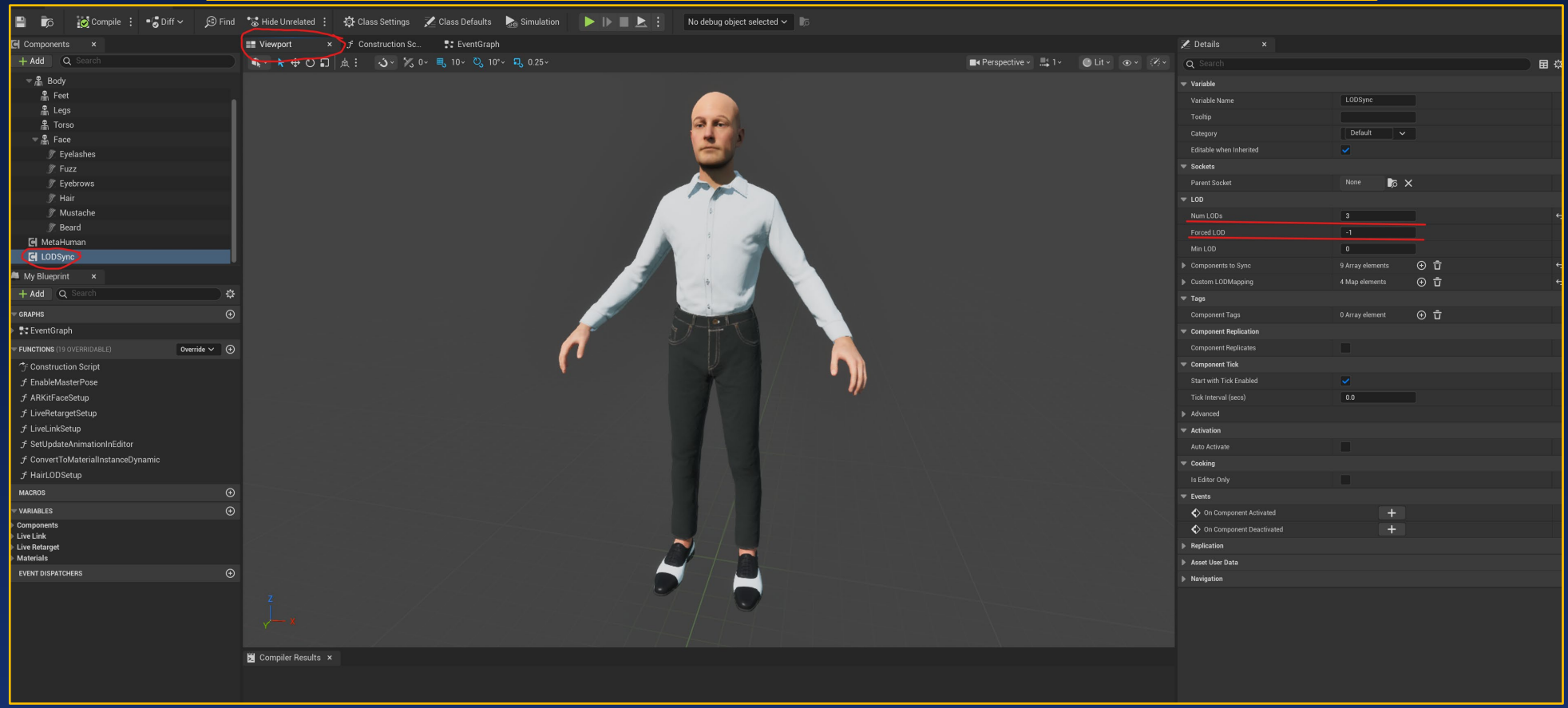
1. Open your MetaHuman Character Blueprint and select Viewport.

2. In the left outliner, select LODsync.

3. In the right outliner you'll find:
NumLODs
ForcedLODs

4. Change their values to:
NumLODs: 1
ForcedLODs: 0





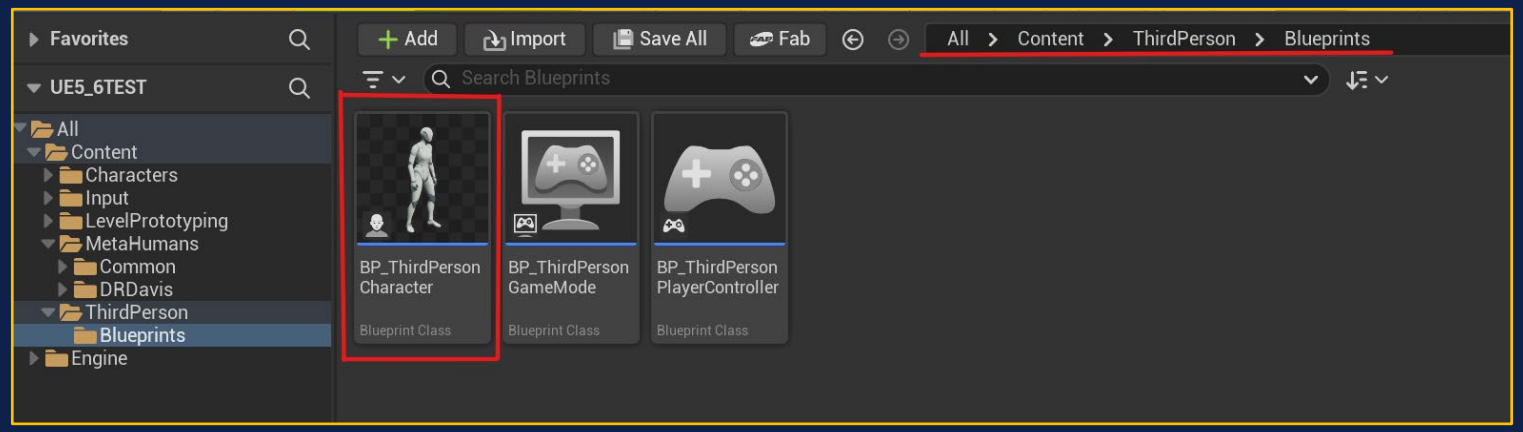
Making the MetaHuman Playable

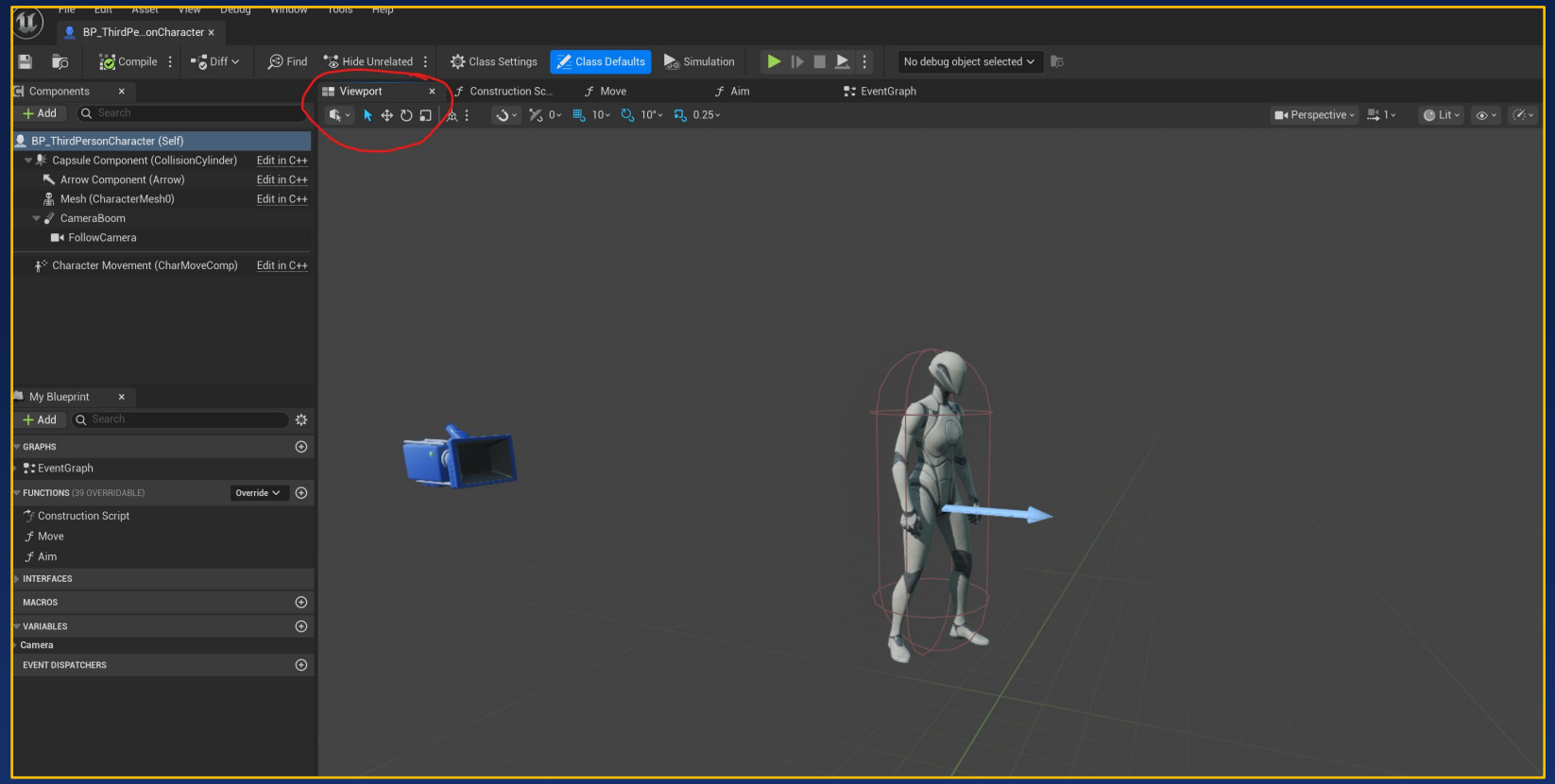
1. Open the default Third Person character Blueprint:

Conent>ThirdPerson>Blueprints >BP_ThirdPersonCharacter

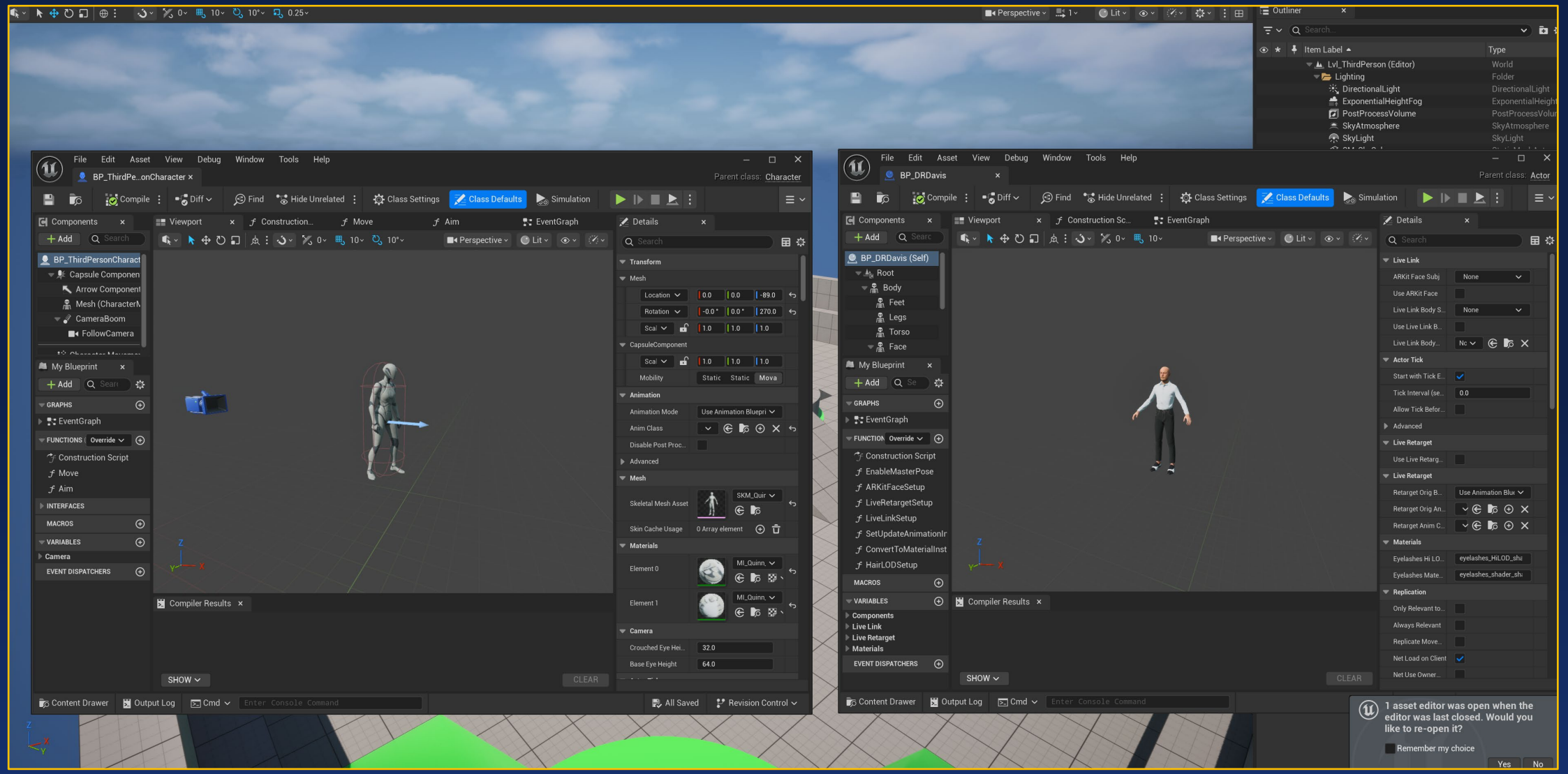
2. Go in to the Viewport.

3. Reopen you MetaHuman Character viewport.





Your screen should look like this:



Making the MetaHuman Playable

In your MetaHuman Viewport:

1. Shift click and select every component from Body down to LODsync.

(Make sure all the drop downs are open, as seen with “Face”).

2. Control+C to copy these components.

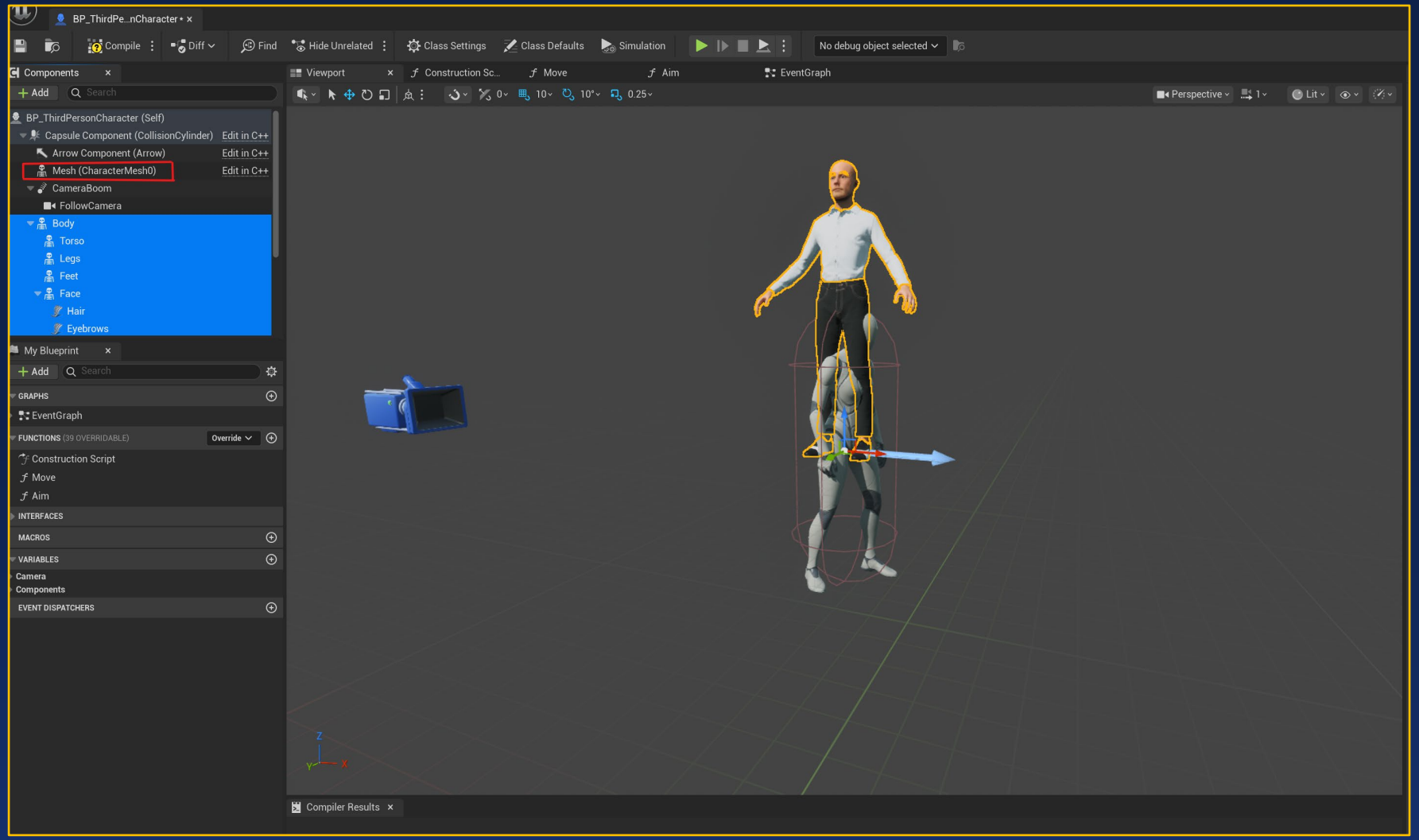


Making the MetaHuman Playable

Now in your ThirdPersonCharacter Viewport:

1. Select “Mesh” in the outliner.

2. Press Control+V to paste in your MetaHuman components.



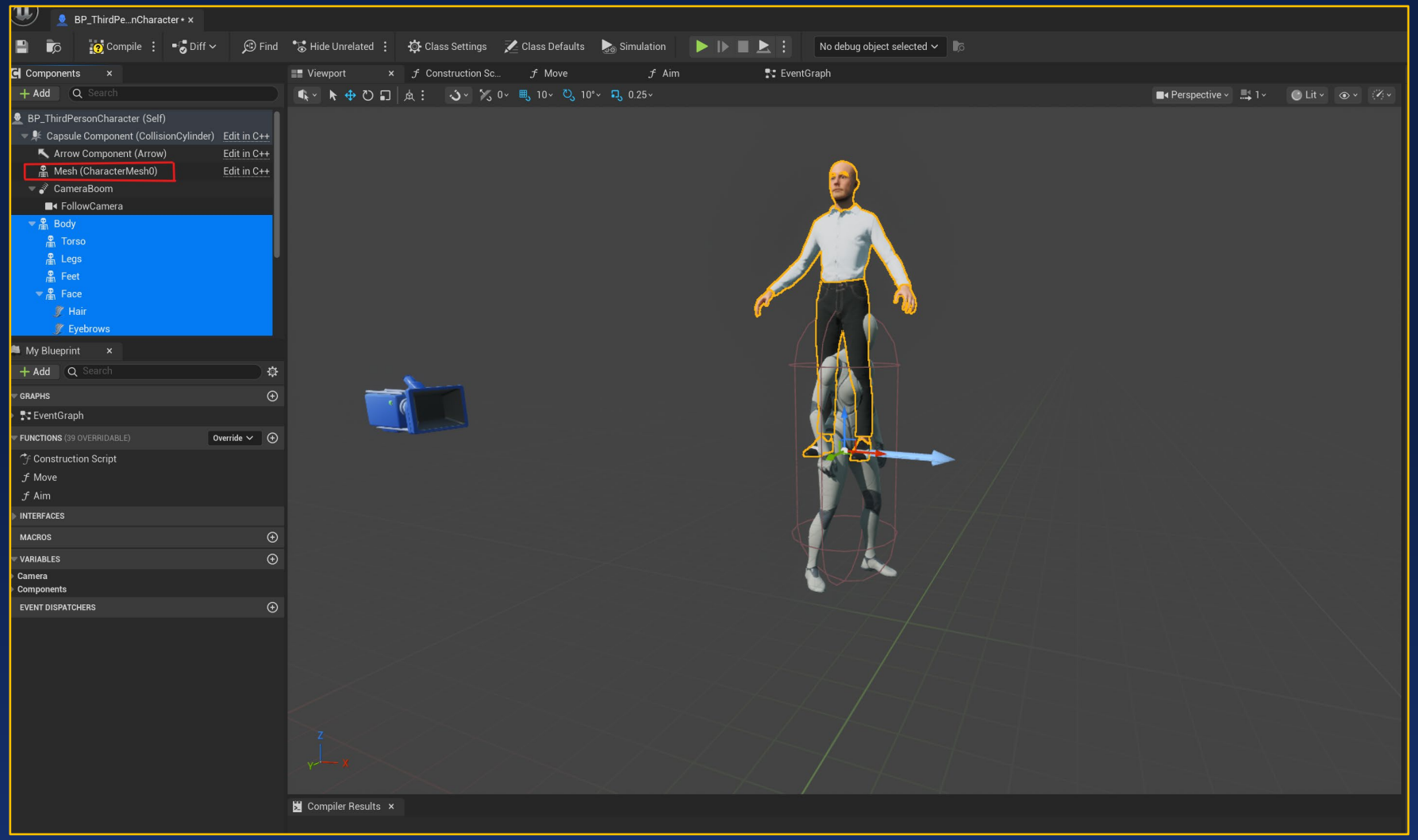
Making the MetaHuman Playable

Now in your ThirdPersonCharacter Viewport:

1. Select “Mesh” in the outliner.

2. Press Control+V to paste in your MetaHuman components.

3. In the same left hand outliner, drag “Body” on to the “Mesh” component.



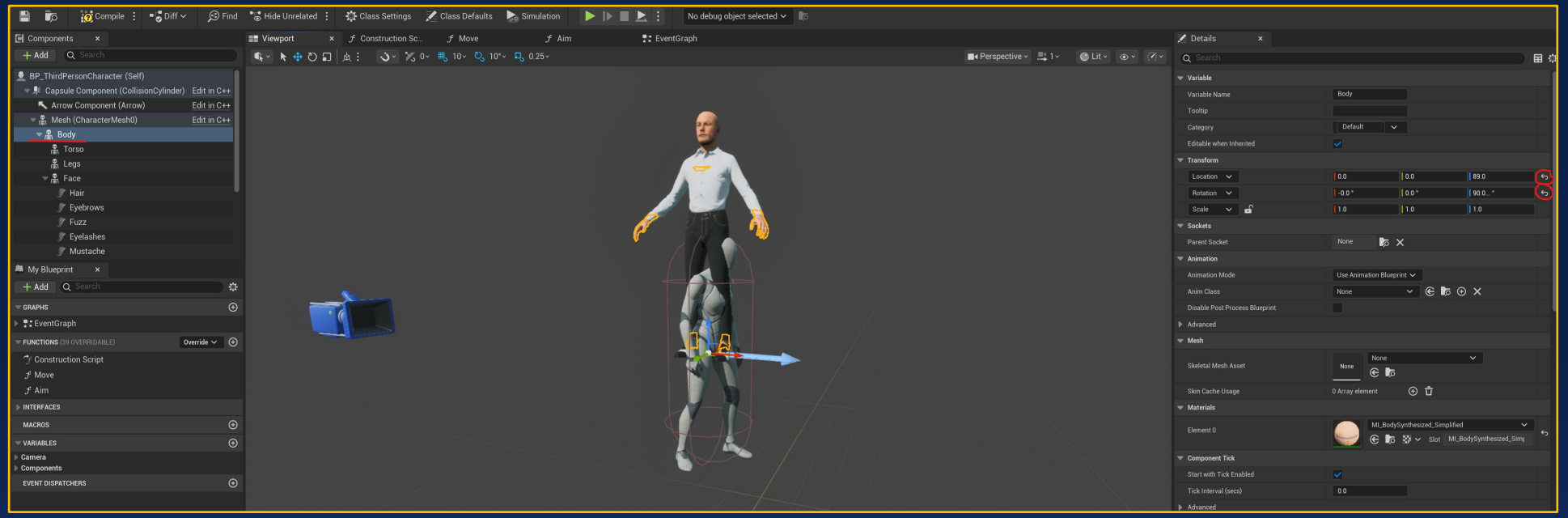
Making the MetaHuman Playable

Staying in the ThirdPersonCharacter viewport:

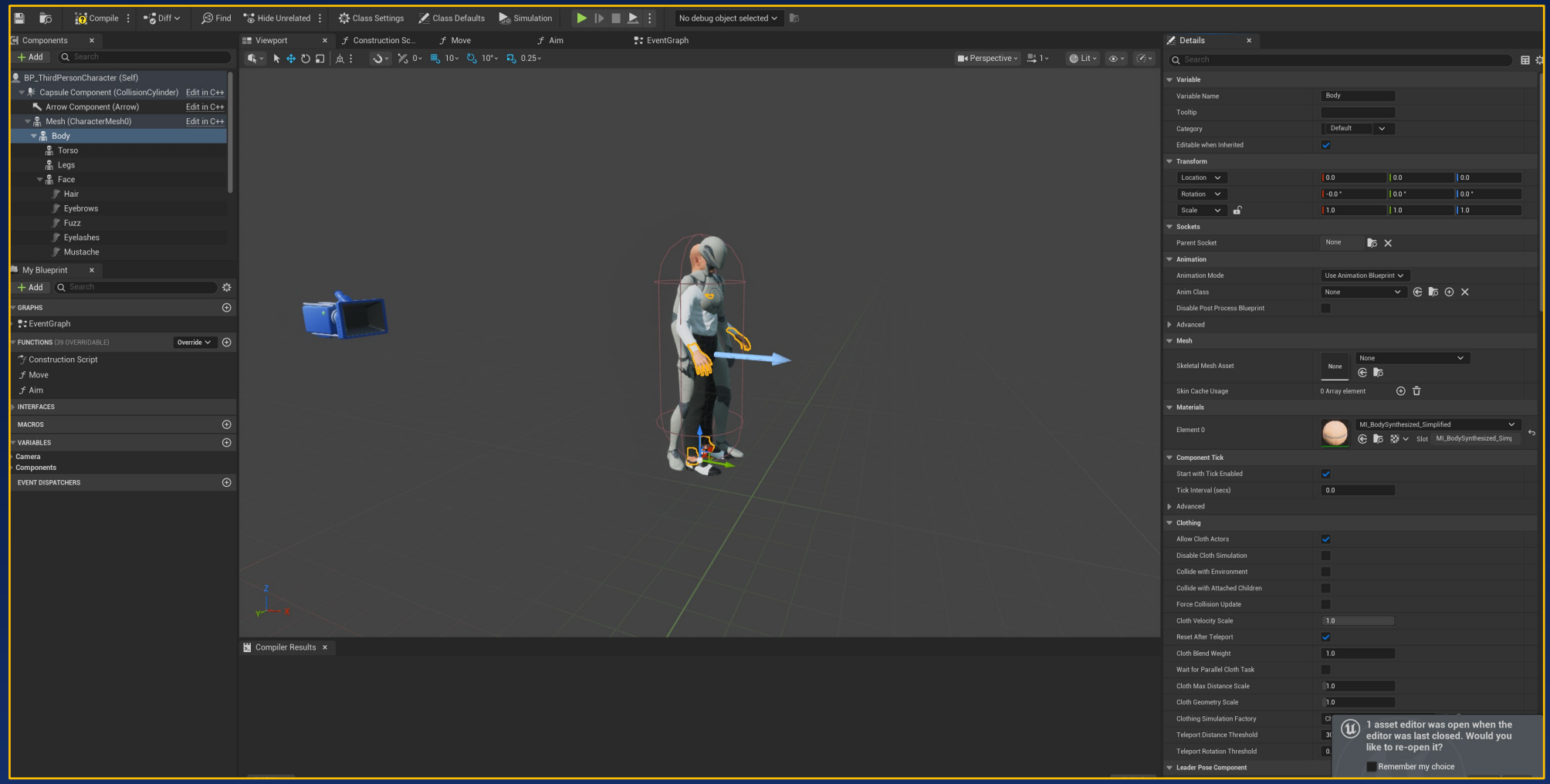
1. With body selected in the left outliner.

2. In the right outliner, reset the “Location” and “Rotation” to 0.

Your MetaHuman should stood in the same place as the Mannequin.



Your screen should look like this:



Making the MetaHuman playable:

Select Construction Script next to the Viewport.

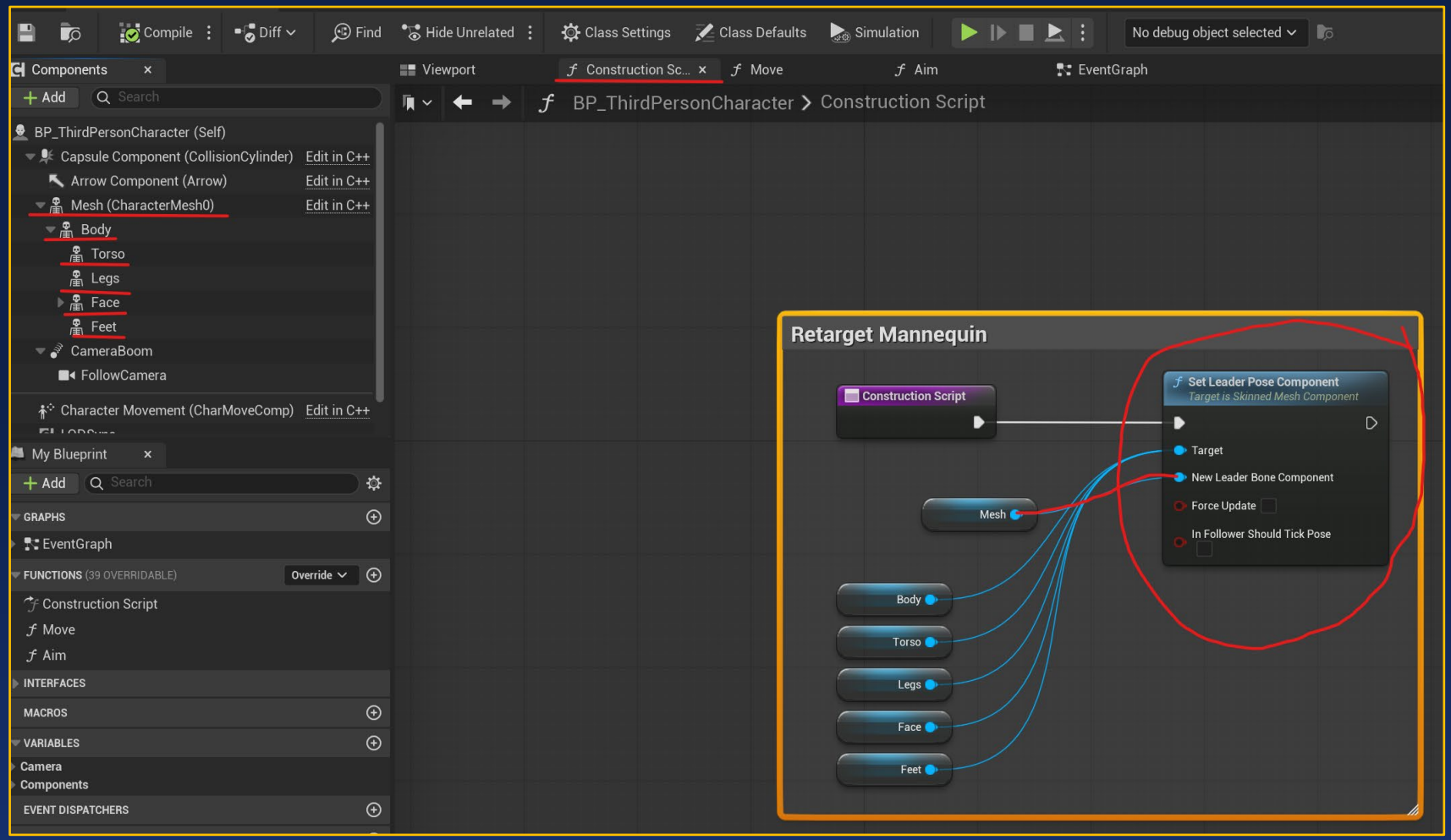
1. In the left outliner, drag the “Mesh” component on to the blueprint.

2. Drag from the mesh pin a search for “Set Leader Pose component”, but change its pin so it is now the “New leader bone component”.

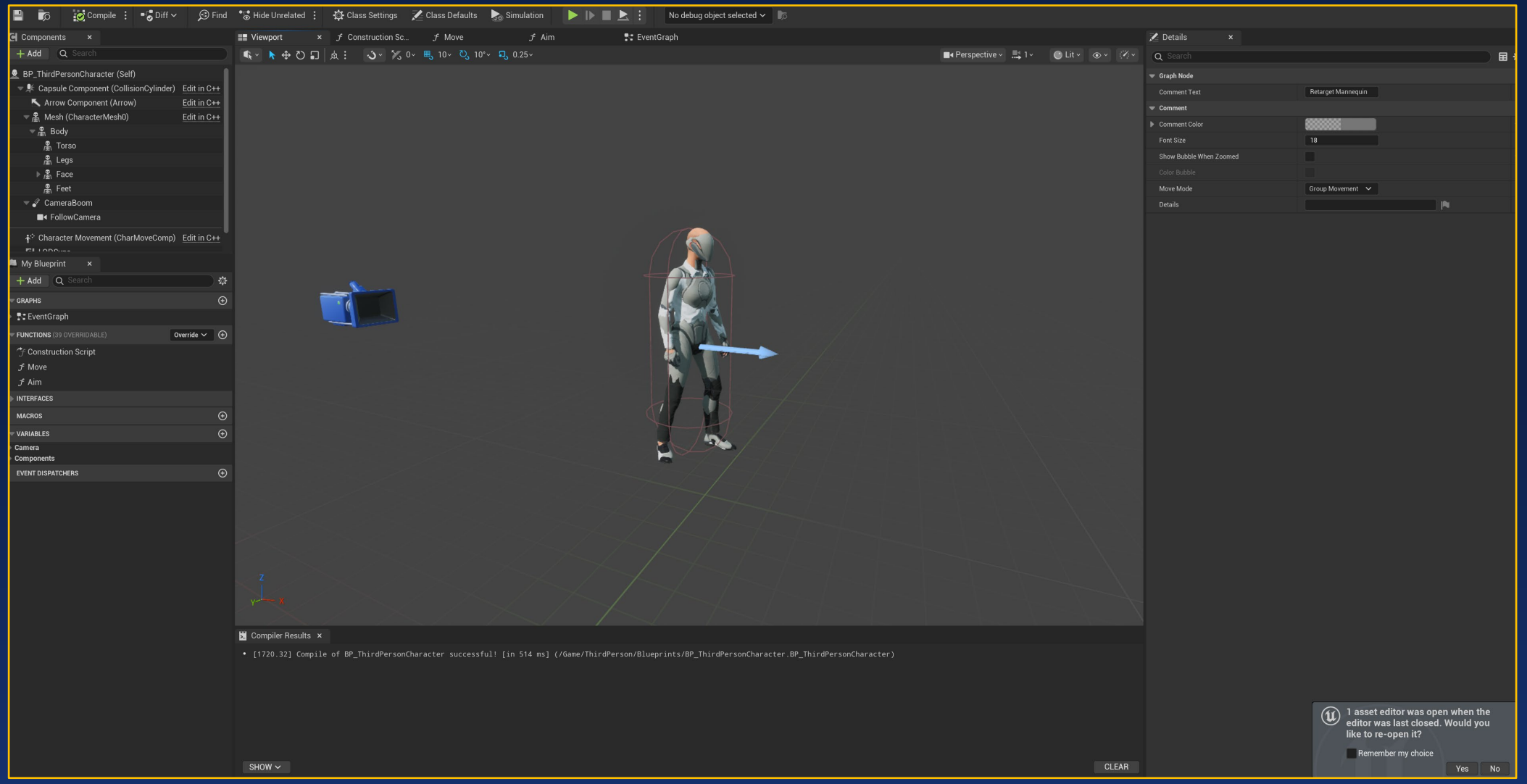
3. In the left outliner drag in: Body, Torso, Legs, Face & Feet

Connect these pins to the “Target” node.

Connect the Construction Script to the “Set Leader Pose Compnent”, then compile and save.



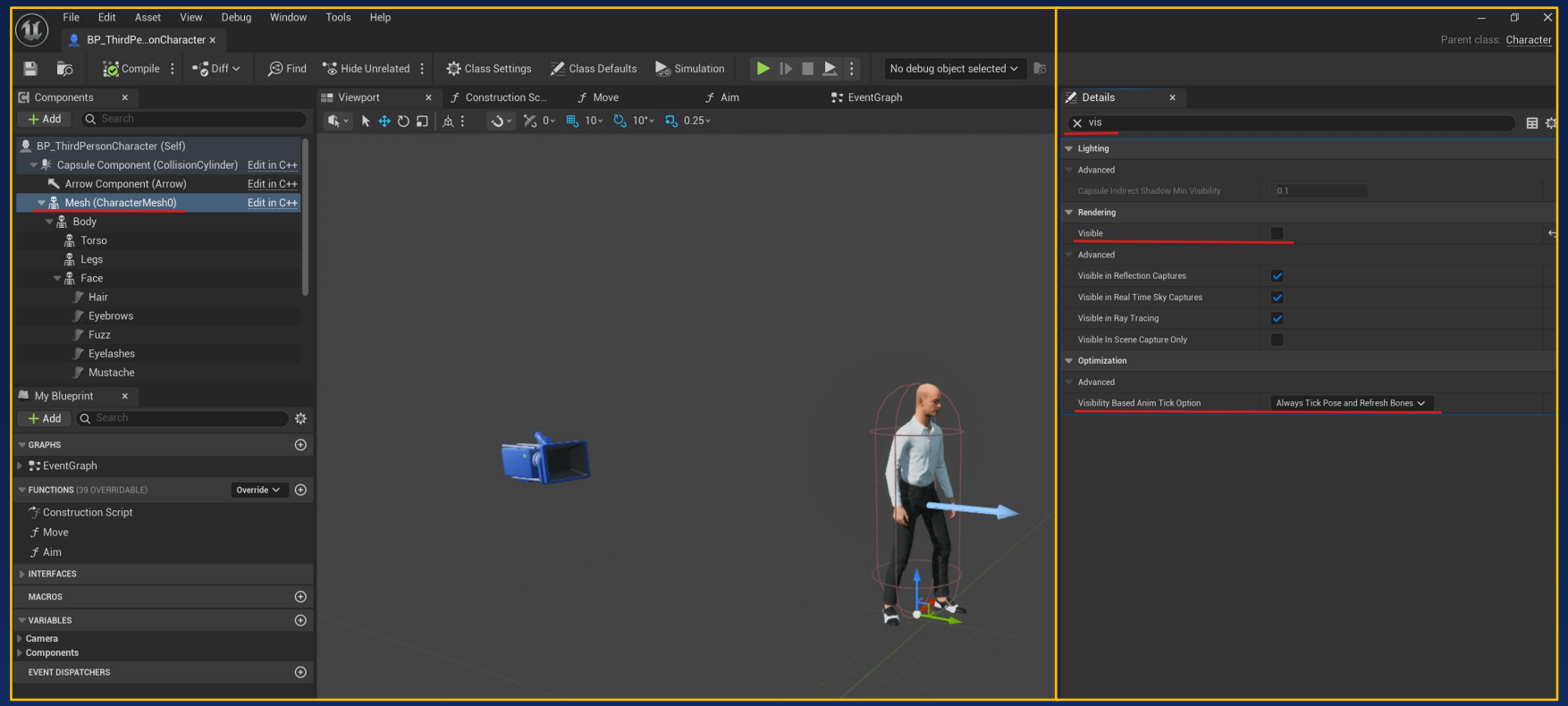
Head back to Viewport and your screen should look like this:



Making the MetaHuman playable:

In the viewports left outliner:

1. Select the “Mesh” component.
2. In the right outliner search “Vis”.
3. Uncheck the Visible box.
4. In the “Visibility Based Anim Tick Option” drop down, select “Always Tick Pose and Refresh Bones.
5. Compile and Save.



Congratulations your MetaHuman should now be playable.

