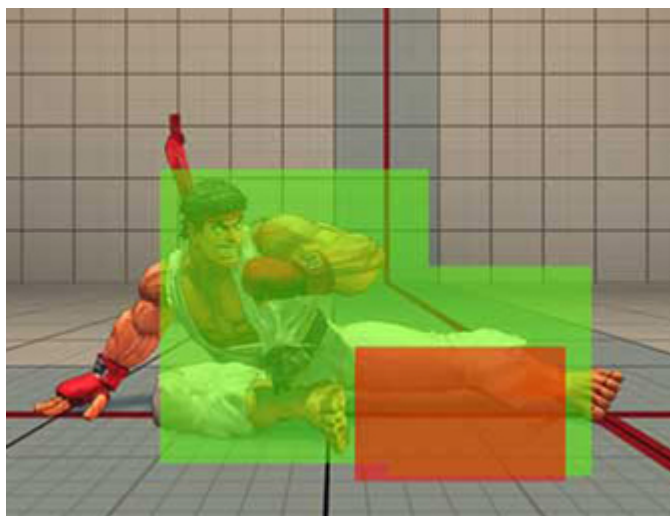


# Hit Box Setup

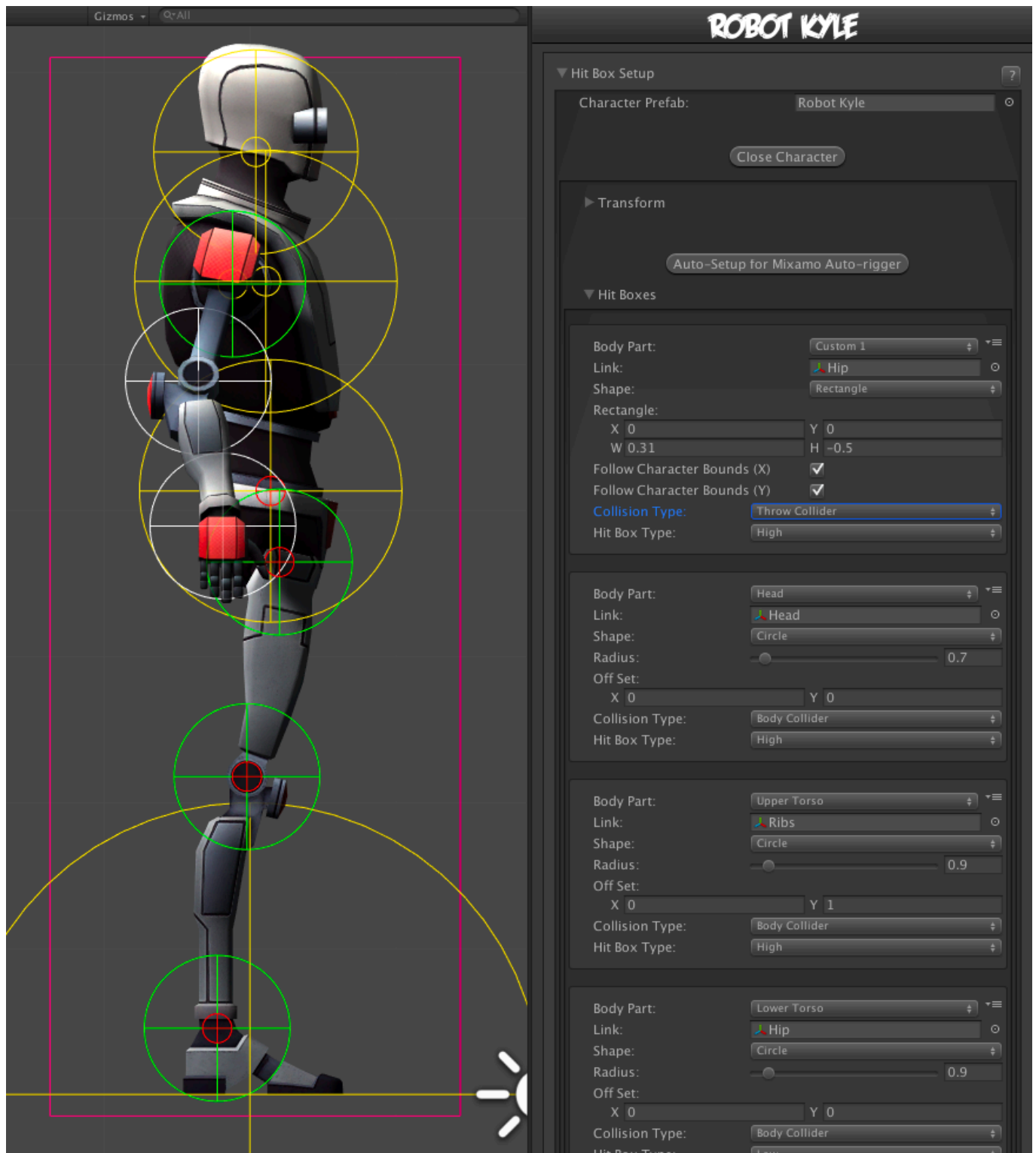
One of the key ingredients of any fighting game are hit boxes. Different than other action games, 2.5D fighting games rely on precision hits in a more “mechanical” way, as it emulates the sensation of playing a 2D game with the precision (and impact) of well adjusted invisible hitboxes.

There are many types of hitboxes, around, and thanks to the recent use of 3D technology to emulate 2D game play, hitboxes are commonly known for following body joints. Here are some examples:



UFE uses a similar technology: if a *hitbox* and a *hurtbox* are overlapping then a hit is confirmed.

UFE uses circles and rectangles as hitboxes which gives you a wide variety of game play to work with. Circles and rectangles can be used simultaneously, UFE will detect hits between any combination of hitbox/hurtbox shapes.



## Character Prefab

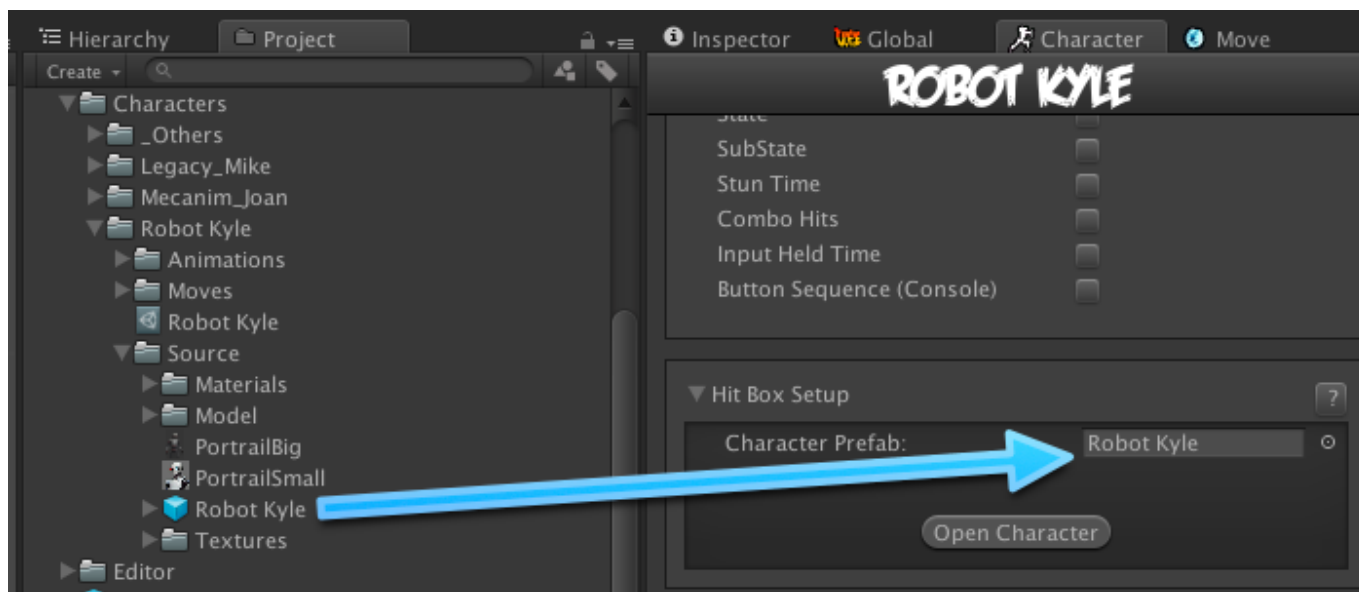
**Choose a character prefab:** A prefab containing the following components

- Animation
- (SOURCE VERSION) Hit Boxes Script (. \UFE\Scripts\HitBoxesScript.cs)
- (OTHER VERSIONS) Hit Boxes Script (. \UFE\Plugin\UFE.dll\HitBoxesScript)

or

## Create a character prefab: Create a character prefab from your character model

- Drag your character model from your project folder to the **Hierarchy**
- If it doesn't have the animation component yet, click on **Add Component**, then search for Animation. No further configuration is necessary.
- Using the Project window, navigate to `.\UFE\Scripts\HitBoxesScript.cs` <sup>1)</sup> and, with the character still selected, drag the script to the Inspector window. No further configuration is necessary.
- Once you're done, drag the character back from Hierarchy to your desired folder in the Project window. Unity will automatically create a prefab.



Now drag your newly created prefab to the *Character Prefab* in the Hit Box Setup panel. Once you have your character in, you can click on “Open Character” to see the character. Now let's configure the hitboxes.

## Transform

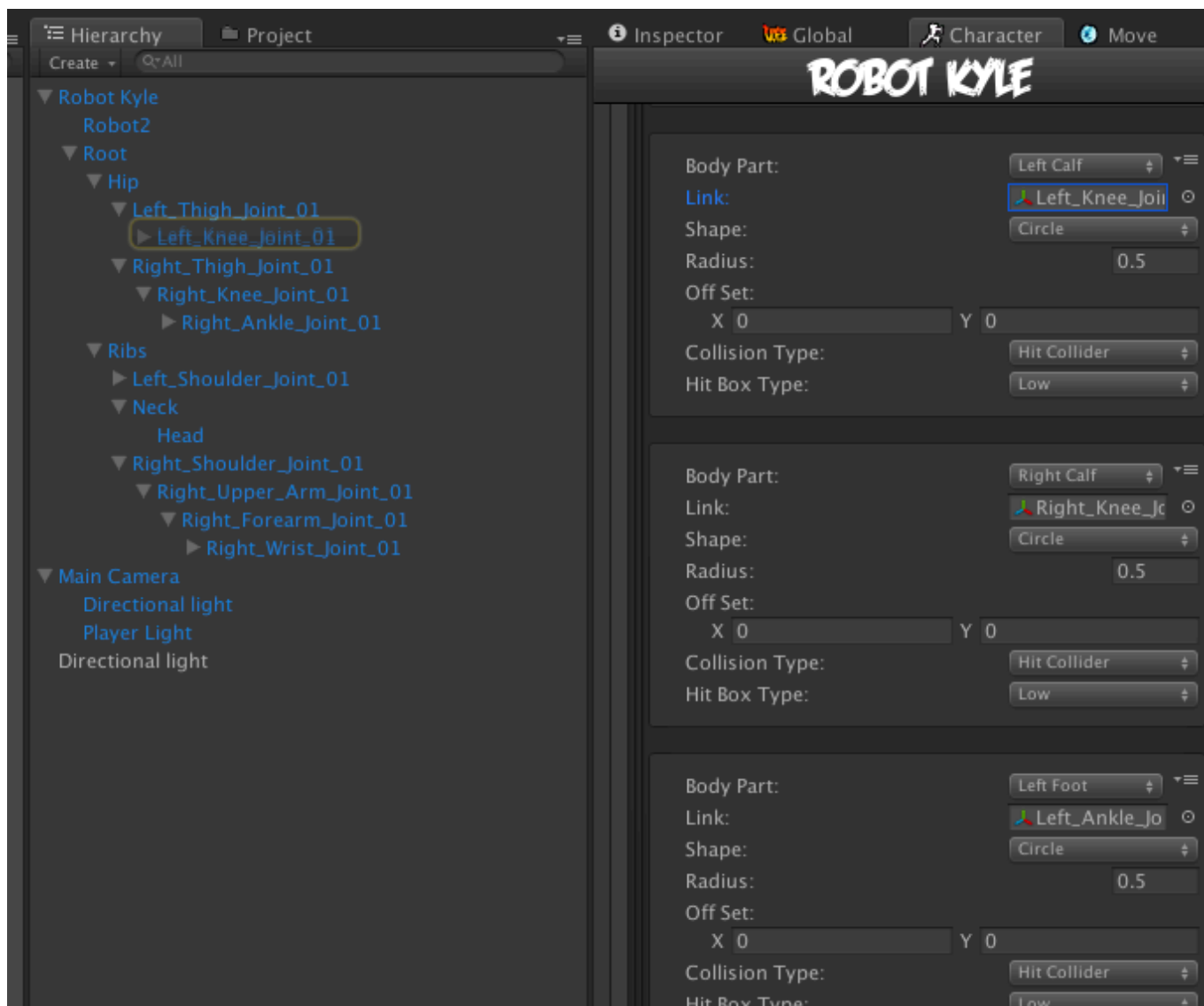
Works similar to Unity's default Transform component. Adjust your character's rotation so it looks like it's standing on the left side of the screen.

### Notes:

- Avoid changing the character's position as it will save its “local position” and it might cause some visual bugs in the future.
- Even though you can use the standard t-pose as the default animation when importing your character, it's recommended that you use the idle animation as your character's default pose/animation. It makes it easier to work with hitboxes, specially if you adjust the character rotation.
- Make sure you adjust the character's rotation as you would like to see them on screen. 2.5D Fighting games tend to have more “theatrical” pose, in a sense that their body language is constantly facing the camera (or “audience”), while their heads are facing the opponent.
- Don't worry about mirroring your animations. UFE will take care of that for you.

## Hit Boxes

Tag your character's body parts to the hit boxes, set its shape, size, collision type and hitbox type.



- **Body Part:** A tag representing the body part inside UFE.
- **Link:** The body part related to the character on screen. Navigate through the mesh and select the bone that best cover the selected body part.
- **Shape:** Circle or Rectangle shape hitbox.
  - (Circle) **Radius:** How big the hitbox is. Its recommended that yellow hitboxes cover as much ground as possible to avoid unexpected cross-overs during battle.
  - (Circle) **Off Set:** Off set the hit boxes around the character body if needed. Be careful with high values, as different animations can cause unexpected positioning.
  - (Rect) **Rectangle:** X and Y make up the bottom left corner; W and H is the size calculated as distance from X and Y respectively.
  - (Rect) **Follow Bounds (X/Y):** Toggle this if the rectangle shape is to follow the bounds of the character. Note that this uses Unity's [Renderer Bounds](#). Adjust W and H to suit.
- **Collision Type:**
  - Body Collider (yellow hitboxes): Movement and hit collision. Opposing yellow hitboxes

cannot overlap.

- Hit Collider (green hitboxes): Hit collision only. Opposing green hitboxes can overlap.
- No Collider (white hitboxes): No collision. Use these for body parts that are not considered hitboxes but can be a [hurtbox](#) if needed.
- Throw Collider (red hitboxes): Used to detect attacks that have hittype of Throw. If the character doesn't have a Throw Collider hitbox, then throws will not work against them.

See also: [Throw Creation Guide](#)

- **Hit Box Type:**

- High: If a non-knockdown attack hits this hitbox, Get Hit High animation group is triggered.
- Low: If a non-knockdown attack hits this hitbox, Get Hit Low animation group is triggered.

- **Default Visibility:** Set the default visibility for certain Game Objects under your character hierarchy. This option is useful for hiding or showing certain objects during gameplay (like weapons). You can then toggle the visibility by using [Move Editor -> Body Parts Visibility Toggle](#).

### Note:

- Each bodypart should be unique. If any bodypart doubles up, it can cause strange behaviour with hit detection. Use Custom 1-9 if you run out of defined ones.
- If you rigged your model using [Mixamo Auto-Rigger](#) you can click on **Auto-Setup for Mixamo Auto-rigger** to automatically set the hit boxes of your character.
- After the last step if you can't see the hitbox in scene view, click on Gizmos (top right corner of scene view) and toggle "HitBoxesScript".

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## Video Tutorial



## Video

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Code example:

```
void OnHit(HitBox strokeHitBox, MoveInfo move, CharacterInfo hitter){  
    if (strokeHitBox.type == HitBoxType.low) Debug.Log ("low hit!");  
}
```

[< Back to Character Editor](#)

1)

.\\UFE\\Plugin\\UFE.dll\\HitBoxesScript if you are not using the source version.

From:

<http://www.ufe3d.com/> - **Universal Fighting Engine**

Permanent link:

<http://www.ufe3d.com/doku.php/character:hitbox?rev=1452837800>

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