

# KARA

## Newsletter – Issue 011

Welcome to the KARA newsletter. These newsletters will keep you informed about the research and development that the KARA project team are undertaking. The project goal is to examine the potential of Gen AI in game development through applied R&D.

### Contents

This newsletter explores how AI-infused technology can assist in creating animations for 3D characters. We will examine the process of generating motion capture data using the Move One feature from Move AI, which will be used to animate the body movement of one of the Detonation Racing characters. Our character artist had to step out of his comfort zone and try to supervise the AI animation tools to create the character animation.

Content list:  
Creating GAI assisted 3D character body animation

IMPORTANT: Inclusion of tools in this newsletter does not imply their clearance for use.

**Project Goal**  
Examine the potential of Gen AI in game development through applied R&D.



# What is KARA?



In 2023, Project AVA took on the challenge of utilising Generative AI tools to assist in the design and development of a videogame from scratch. This applied R&D approach gave us the best insights into the true potential of AI for video game development.

The AVA team went to GDC in 2024 to report on their findings ([watch the video](#)).

KARA is the continuation of this effort. Using Electric Square's *Detonation Racing* as a case study, the team's plan is to remaster the game using pipelines infused with Generative AI tools.

The goal of KARA is to further enhance our expertise in Generative AI for game development. This includes a focus on how GAI tools can boost 3D art pipelines.

[Project KARA | Keywords Studios Limited](#)



# Creating **GAI assisted** 3D character body animation

## Introduction

While Detonation Racing primarily focuses on vehicles, we aimed to enhance our supporting characters. Having successfully converted 2D illustrations to 3D models using AI, we explored adding movement to bring these characters to life.

Our research led us to Move AI, a tool that captures body movements and transfers them to 3D models. This technology allows users to easily generate lifelike character animations by recording their own physical actions with a single camera.

Although full character animation wasn't in our original scope, we embraced this opportunity. Our character artist stepped up to supervise the AI animation process, pushing beyond initial expectations while staying within practical limits.

Let's examine the results of this innovative approach.



## PIPELINE SPOTLIGHT

# Creating GAI assisted 3D character body animation

### STANDARD PIPELINE

### AI INFUSED PIPELINE

Character animation is traditionally accomplished through two main methods: motion capture and manual keyframe animation. Motion capture equipment is often prohibitively expensive for smaller studios. This leaves manual keyframe animation as the more accessible option for many teams.

By understanding this traditional method, we can better evaluate the efficiency and effectiveness of AI-assisted animation techniques in our project.



PIPELINE SPOTLIGHT

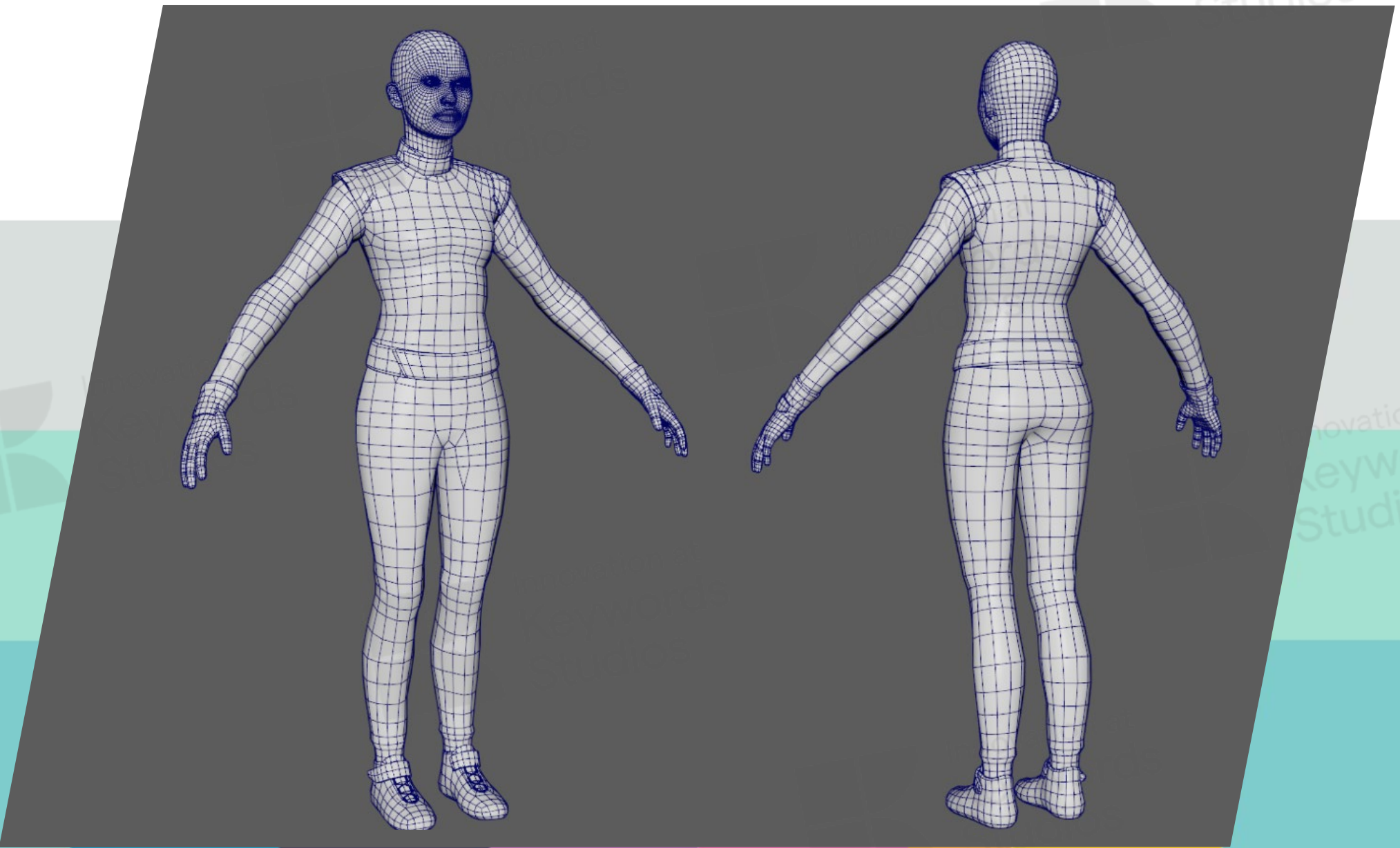
Creating GAI assisted 3D character body animation

# Standard pipeline

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## 3D Modelling

3D modellers create character face and body meshes using software like Blender, Maya, or ZBrush. It is crucial to ensure proper topology flow and sufficient polygon count, especially in areas of movement, to produce high-quality animations.



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## Body Rigging

To animate the character's body, a rig is created by setting up a skeleton system comprising of bones, joints, and control points. This rig is then applied to the mesh model through a process called skinning.

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## Blocking

In this initial animation stage, the animator defines key poses, establishing the major "beats" of the character's movement in a scene. This rough process focuses on timing, movement arcs, and key moments, rather than detailed poses, laying the foundation for the overall animation sequence.



PIPELINE SPOTLIGHT

Creating GAI assisted 3D character body animation

# Standard pipeline

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## Keyframe Animation

In keyframe animation, key poses are set at specific points on the timeline, with the software generating intermediate frames (in-betweens or tweens) for smooth motion. Primary actions, such as walking, are complemented by secondary animations like hair or clothing movement, eye movements, and subtle head shifts. These additional elements enhance realism, making the animation more lifelike and believable.

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## Polishing

After blocking the rough animation and setting keyframes, animators refine the movement by adjusting timing and easing, correcting unnatural motions, and ensuring smooth transitions between poses.



## PIPELINE SPOTLIGHT

# Creating GAI assisted 3D character body animation

MOVE

STANDARD PIPELINE

AI INFUSED PIPELINE

Move One from MoveAI is a single-camera markerless motion capture solution for indie creators and small studios. It's designed for easy setup and use in various environments.

This basic tool allowed us to add realistic movement to our otherwise static 3D characters. While it has limitations and requires some learning, Move One offered a good balance of accessibility and functionality for our project needs.

PIPELINE SPOTLIGHT

Creating GAI assisted 3D character body animation



Move AI is a motion capture technology that uses smartphone cameras to transform human movements into lifelike 3D animations.

# AI infused pipeline

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## Capturing the movement

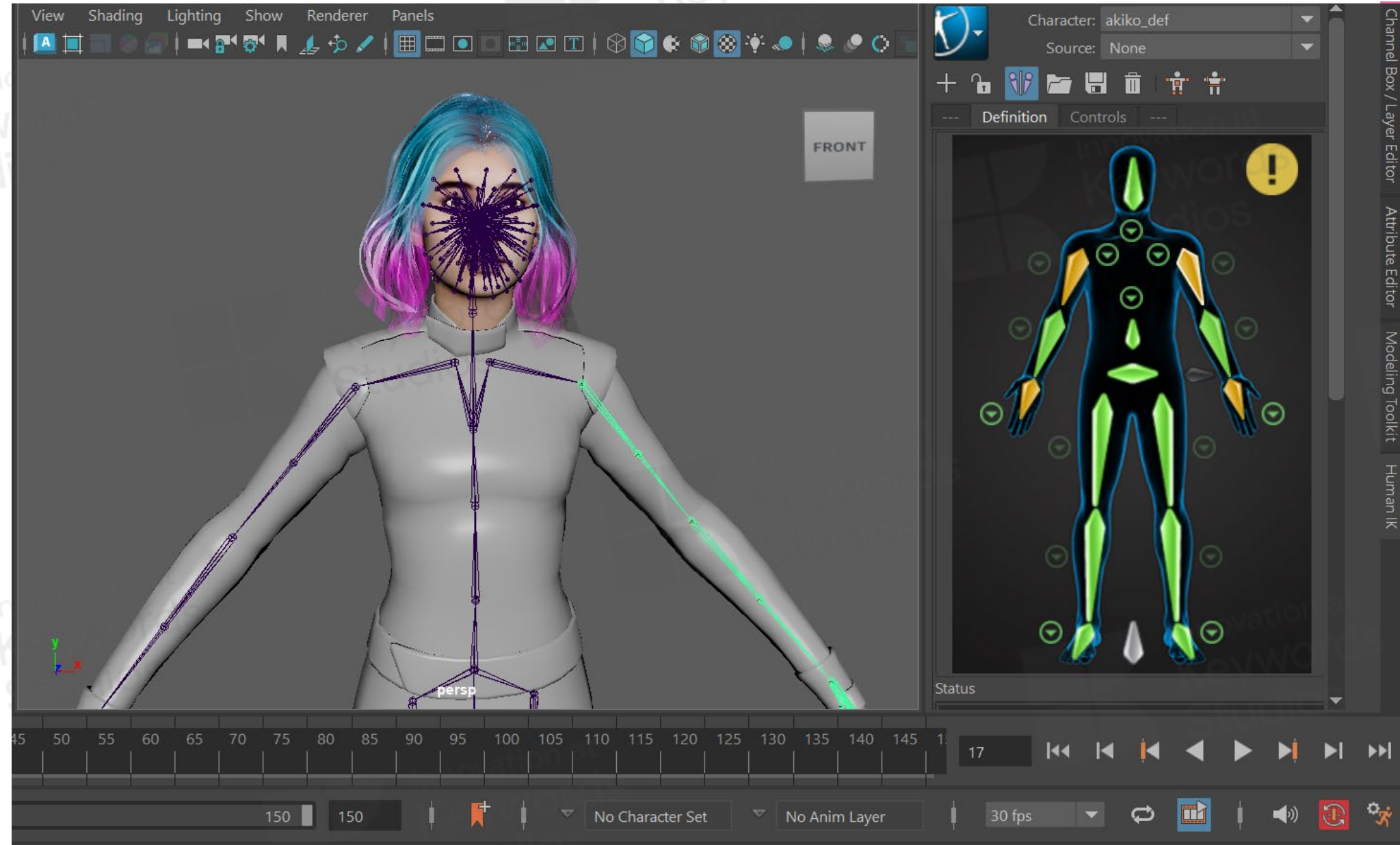
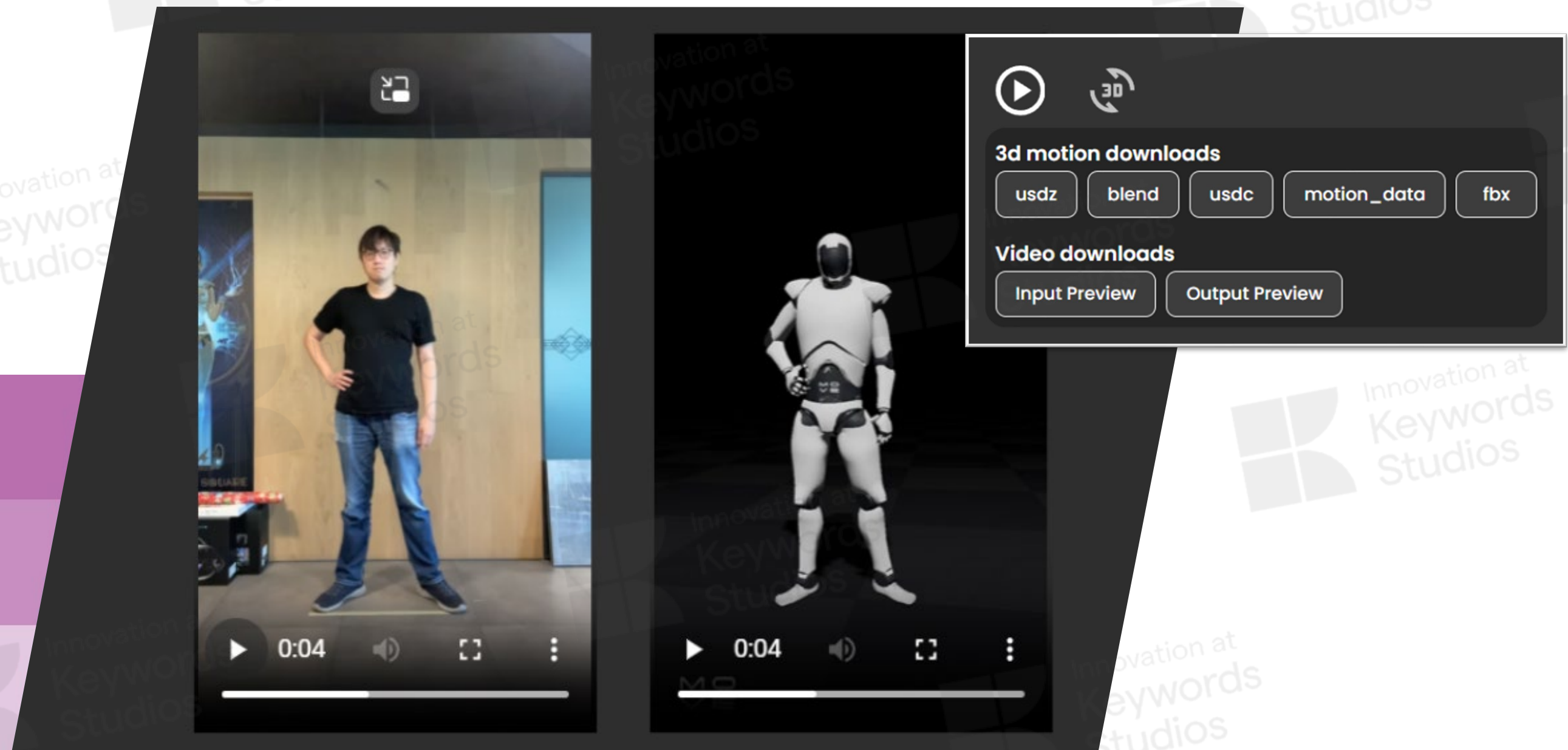
The first step is to capture the movement. Our team started by setting up the software on device and ensuring optimal conditions for recording, such as a stable platform, a well-lit room, and having the subject wear form-fitting clothing that contrasted with their surroundings.

Once a suitable performance was captured, we processed and uploaded it to our Move AI account (this step required credits based on the video's length). After it had been successfully uploaded, the output could then be exported to 3rd party software in a range of formats.

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## Transferring the animation data to a 3D model

Next, we set up the 3D character model's bone system to ensure compatibility with animation transfer and retargeting. We then exported the animated model from Move AI, removing unnecessary meshes to retain only the animated bone setup. Finally, we used Autodesk Maya's HumanIK feature to import the animation data.



PIPELINE SPOTLIGHT

Creating GAI assisted 3D character body animation

Tool used:

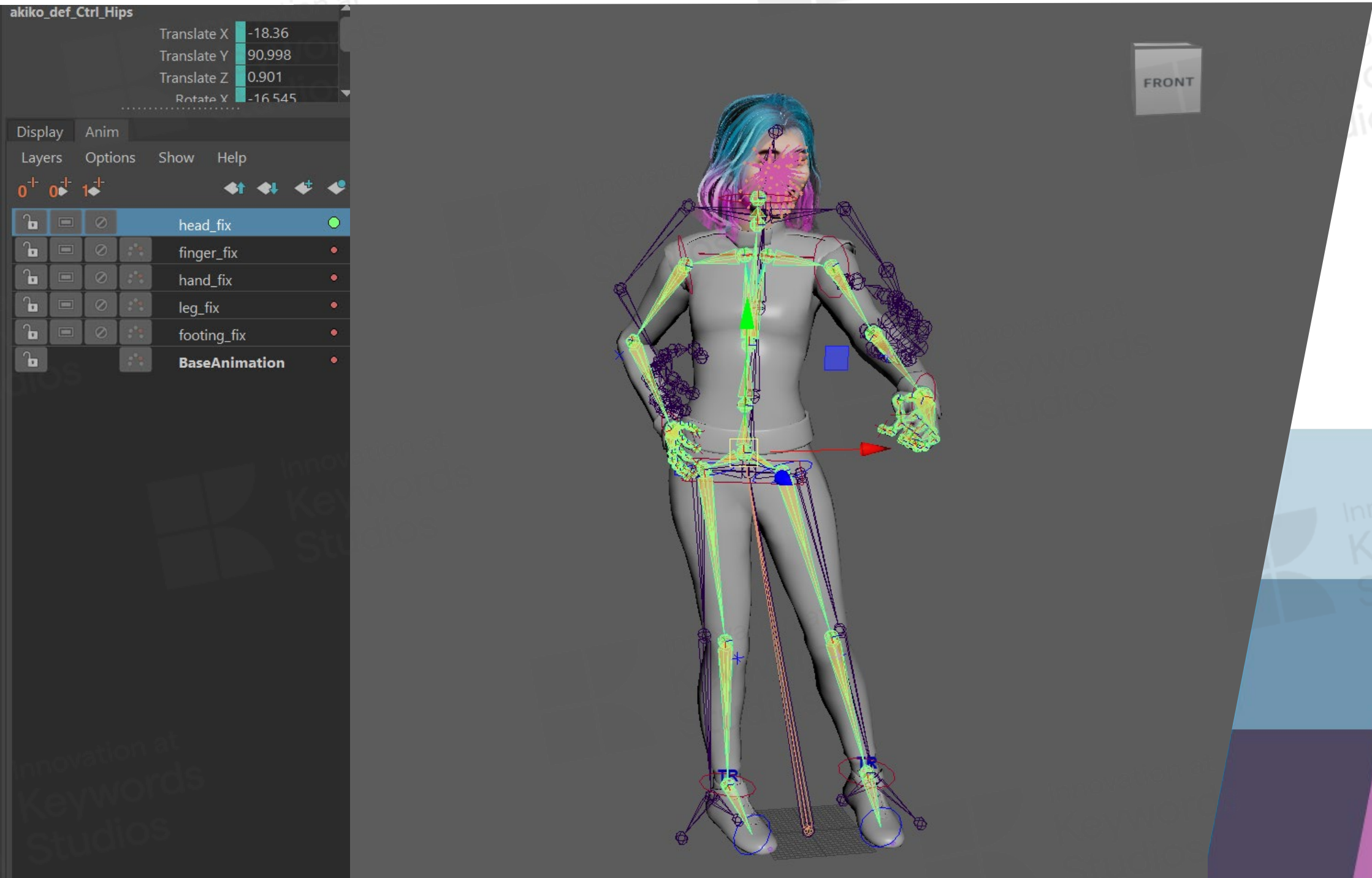


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# AI infused pipeline

## Polishing the animation

Typically, animation data from MoveAI requires some refinement. Issues like incorrect foot elevation or finger animation can be addressed in 3D software after baking the animation data. In our case, we used Maya's animation layer feature to provide us animation controls after baking the animation.



PIPELINE SPOTLIGHT

Creating GAI assisted 3D character body animation

# Pipeline Conclusion

Move AI's technology proved advantageous for creating base animations for character body movement and poses. For our limited character animation requirements, this AI-infused pipeline offered a more cost-effective alternative to conventional performance capture methods and faster results than hand keyframed methods. As a result, we achieved significant cost optimisation, benefiting the overall production budget and timeline.



Thank you.

