Script:

Hello and welcome! My name is Taylor Olsen and I am currently an MFA Graduate student at the Depart of Design following the Digital Animation and Interactive Media (DAIM) track.

Currently in my research interests in animation systems, I have been utilizing 2D Design and Motion software from the Adobe Creative Suite to create rigged human or anthropomorphosized characters. My goal for these 2D characters is to integrate rigging strategies that can be commonly found in 3D animation software to create an improved 2D animation system. The reasoning behind this is to increase the rate at which a 2D character can be created, animated, and rendered into a scene by an individual or group of animators working collaboratively with the same character.

One of the main sources of inspiration for these characters and the styles associated with them is the FX-based series *Archer*. In this series, the 2D animation style of the characters can often be limited but with a distinct style geared towards comic books with bolded character outlines for clarity and distinction. This in contrast with the elaborately dressed 3D backgrounds creates a unique style that provides the audience with an understandable and visually clear layout for each frame.

To address different techniques of animation such as IK structured rigging and overlapping actions similar in *Archer*, I designed a bird-character called “Chuck”. Utilizing aspects of 3D rigging techniques such as Inverse Kinematics, I attempted to mimic *Archer* and rigged Chuck using Adobe After Effects while similarly using Illustrator to create and section parts of the body I needed to move.

Part of the complications of this research have arisen from adhering to a specific visual layout following the initial design of the character. Because of this, the character design inevitably narrowed my approach to how much the character can move, but also dictated and streamlined the effort needed to animate the character. This includes making sure when controllers attached to his hands, legs and other extremities are moved, that his rigged structure continues to look like the initial design proposed. In turn, this should lessen the amount of time needed for myself or another animator to go back and tweak frames that look visually irregular.

In due course of research, I downloaded a plugin for After Effects called DUIK. As the designer of this character, I can bring my assets into After Effects and utilize this plugin. The main feature of DUIK I used is the ability to create Inverse Kinematic (IK) controls. Another way to think of IK rigging is imagining your friend moving your arm solely by where they want your hand to be. This condenses the number of layers and keyframe-clutter that would normally happen from animating the character piece by piece.

Issues that arose were how the line weight would be consistent throughout the overall body structure, as well as movement and displacement inconsistencies due to rigging. To compensate for this, I had to adjust the rigged pieces by over-extending rotated portions of the arms and legs and make use “masking” techniques to cover the parts that I did not want to show. For the rigging issues, many of the initial body pieces have different transformation points that do not follow a completely vertical alignment and had to have their rigged end-point control nodes adjusted for it to properly animate. After fixing this by adjusting the end-point IK node, I can attach the rigged sections back to the main body.

Overall, I managed to get Chuck to a point where I can animate him in the frontal ¾ perspective. To make Chuck easier to animate for myself and possibly others in the future, I hid specific layers in the layout that didn’t need to be touched. But, also left the layers with the control nodes active to remind myself and others in the future that these are the only controllers that needed to be moved.

As for the next steps, I would like to hand off my rig to other animators and implore them to describe any issues or advancements that they could see being implemented. I will also use my rig to create a short animation in which I can further test the capabilities of my character and fix any issues that seem apparent. And lastly, I will investigate DUIK further to let Chuck turn, look left and right, add extra body assets to the character, and utilize different plug-ins that are compatible with After Effects.

Thank you for your time, I hope you enjoyed this explainer video!