IK Rig: Moving Forward

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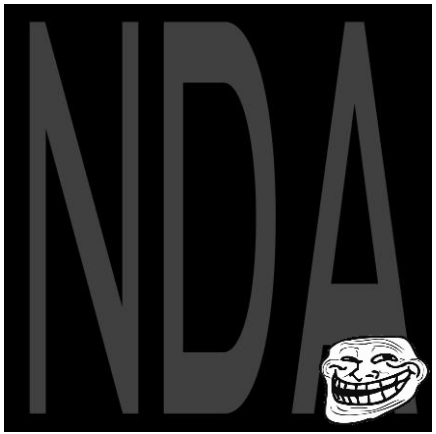
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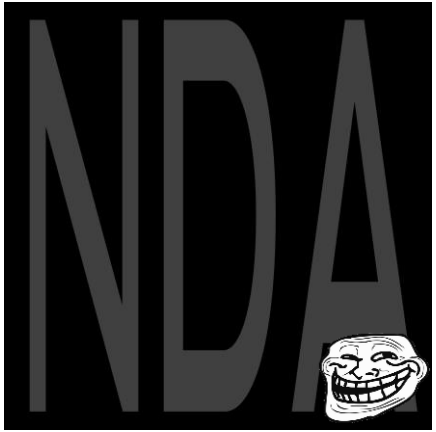
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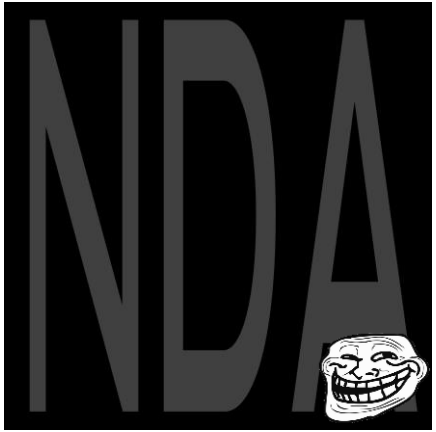
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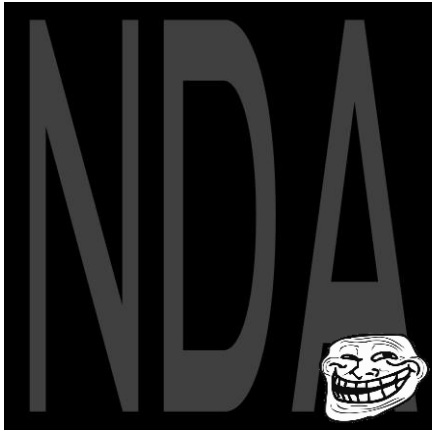
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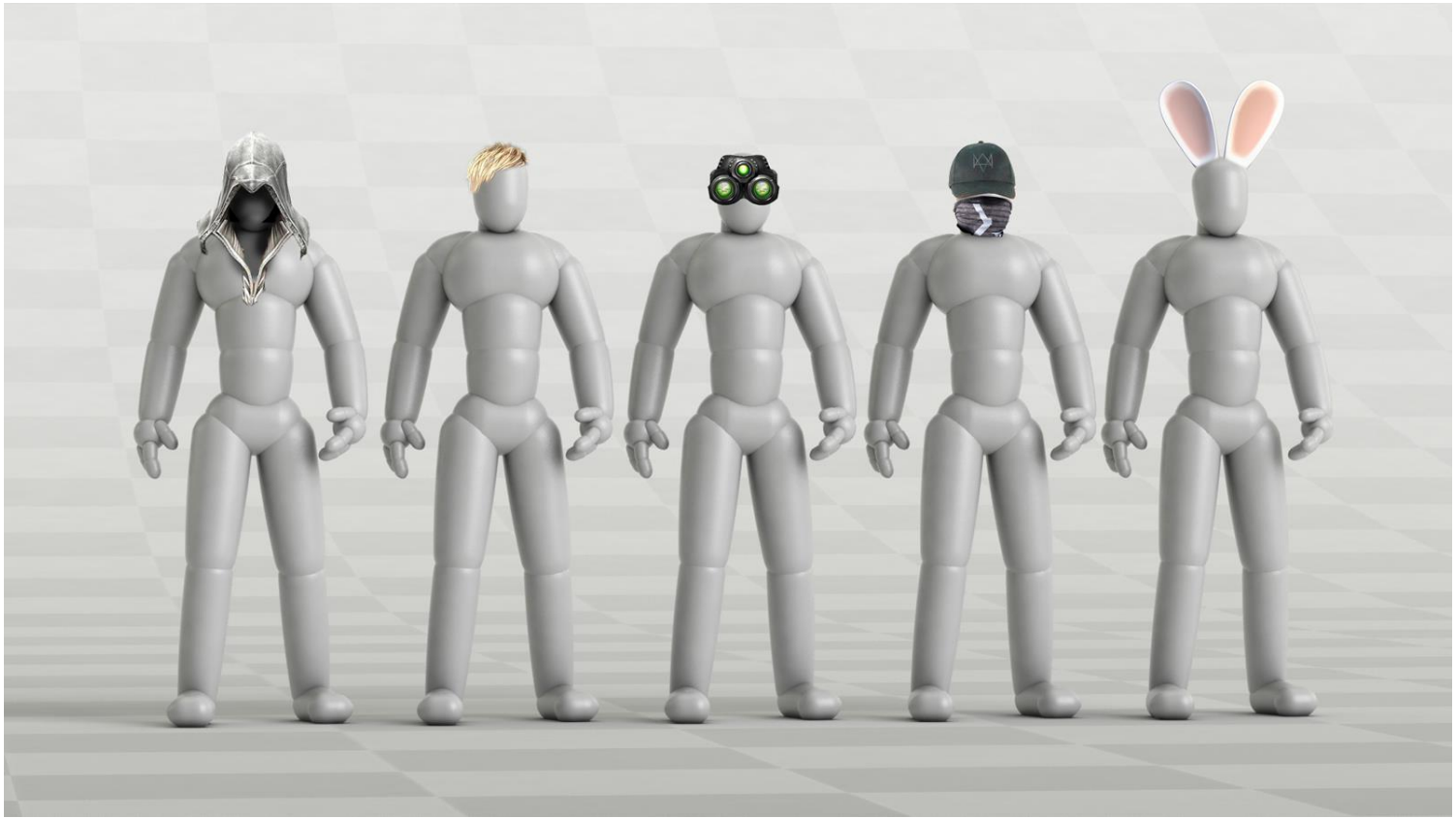
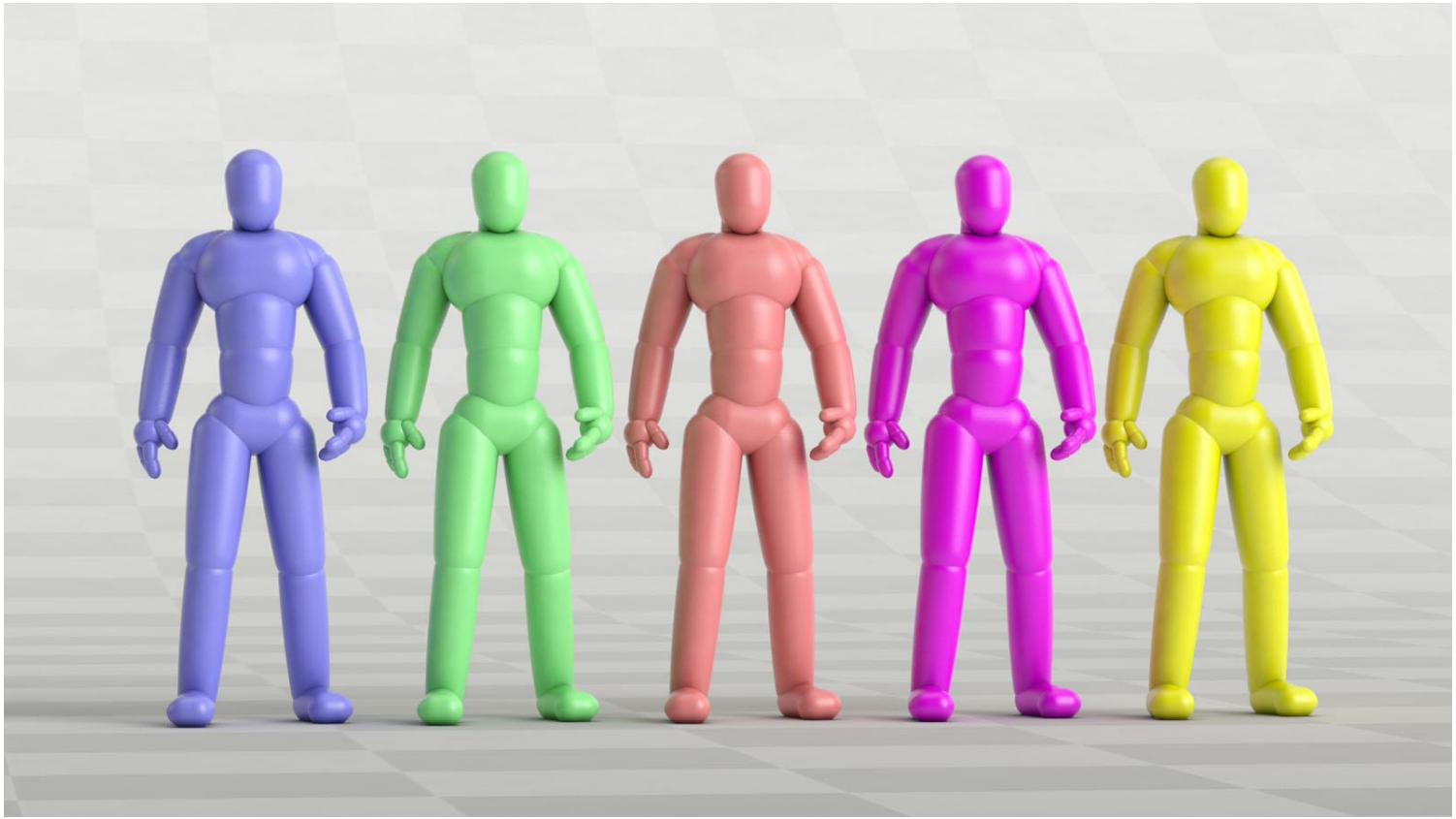
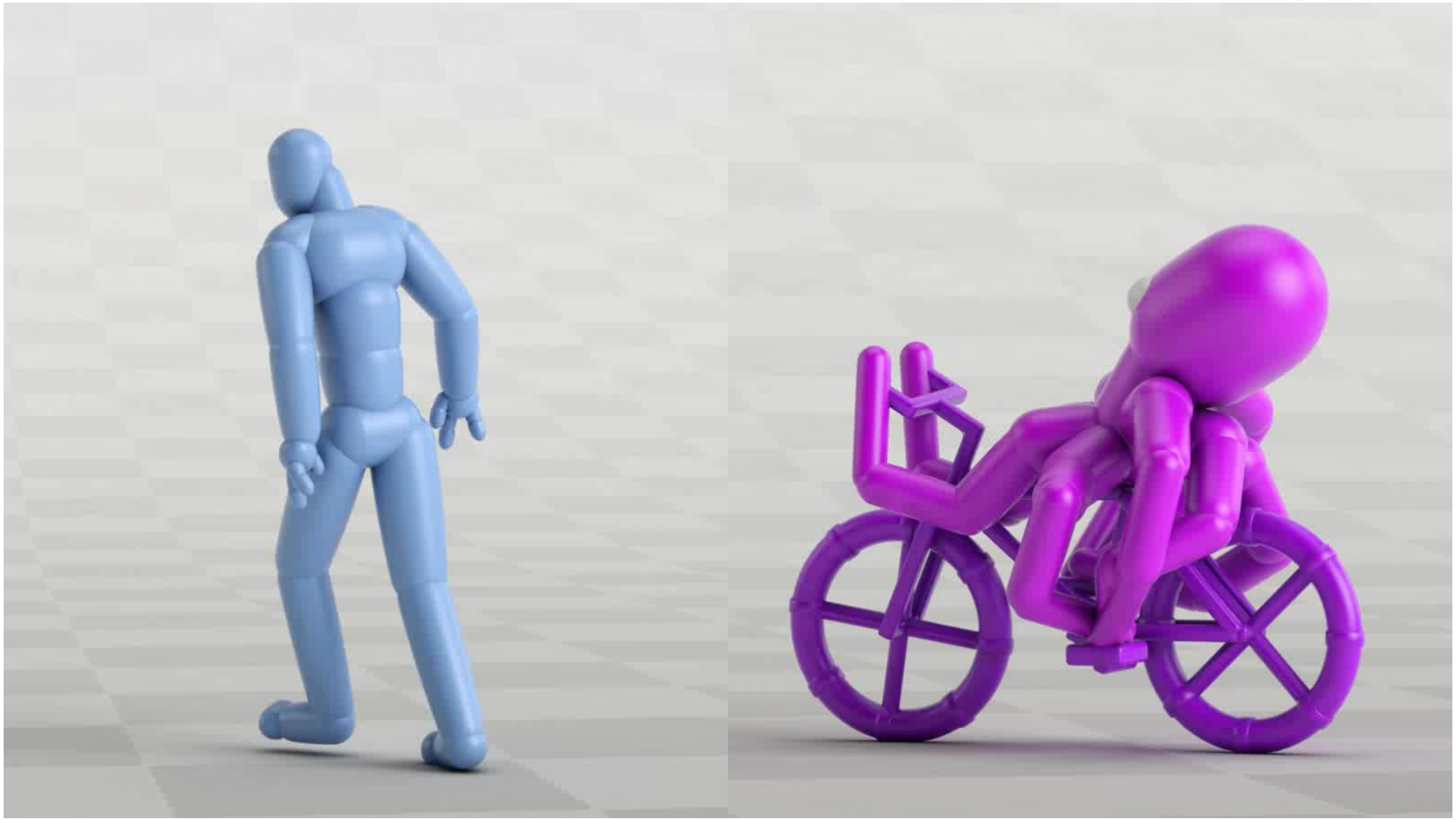
WATCH_DOGS

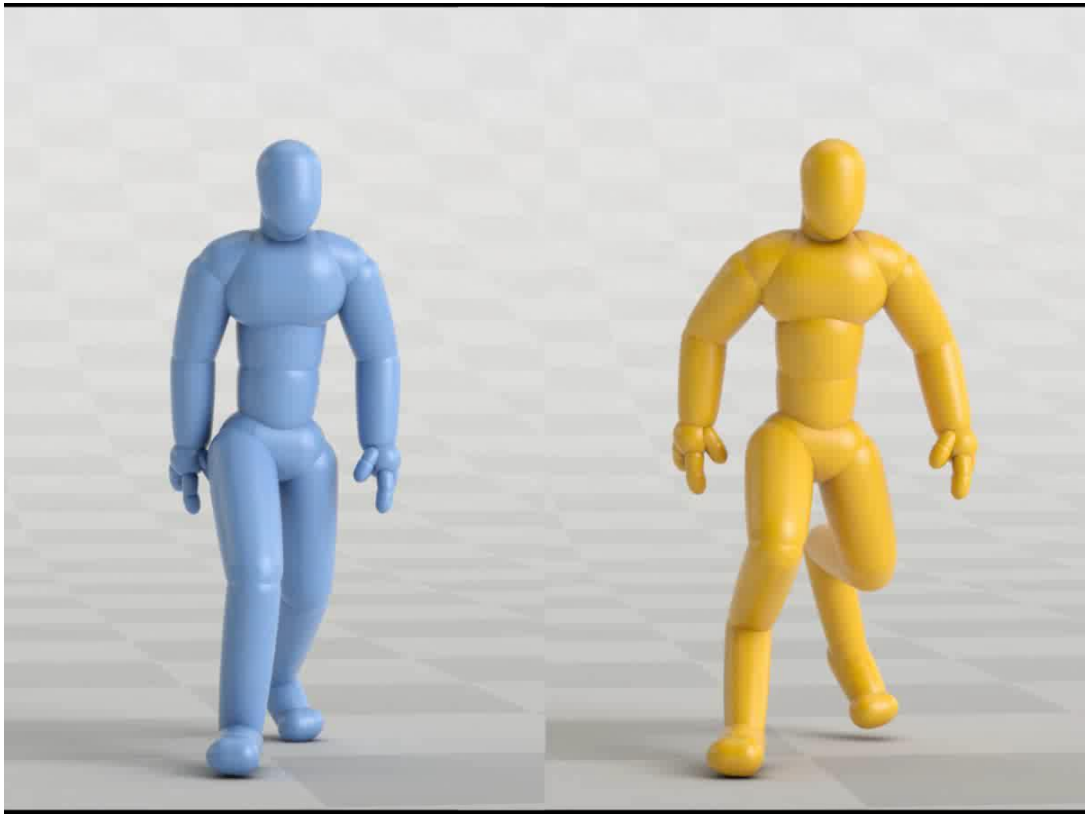






Intro to IK Rig

- Any animation played on any rig
- Behavior rules that can be mixed
- Procedural pose modification



In a Nutshell:

The technique for converting **animation on any rig** into a set of **IK chains**, application of **context-aware adjustments** to these chains and **conversion of result to any other rig**, runtime or offline

CONVERT SOURCE

Your mocap actor rig with all bones and animations (mocap or runtime)

CONVERT SOURCE DATA INTO IK CHAIN PROXY FORMAT

ADJUST

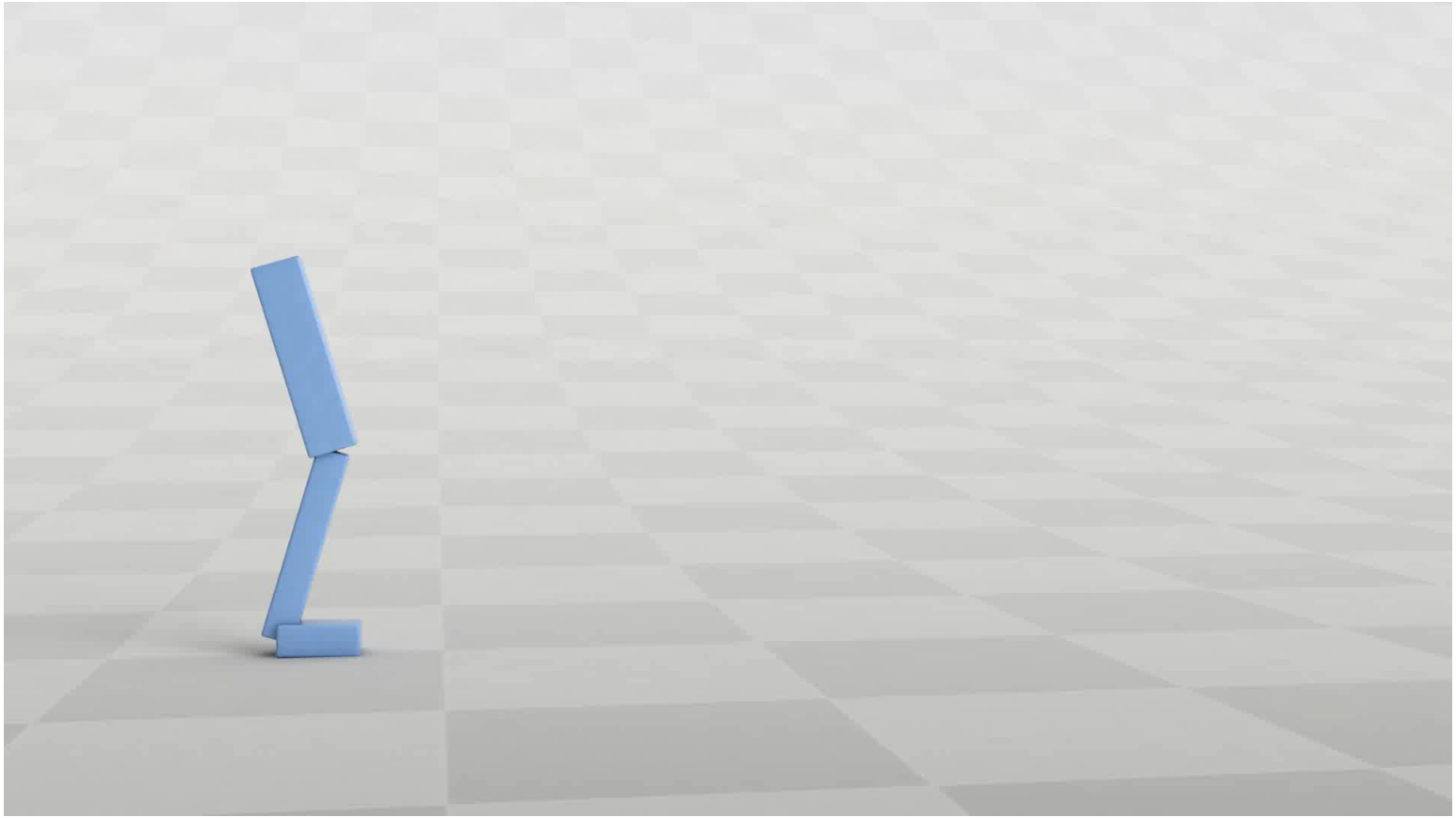
Change behavior based on art inputs and those coming from the engine

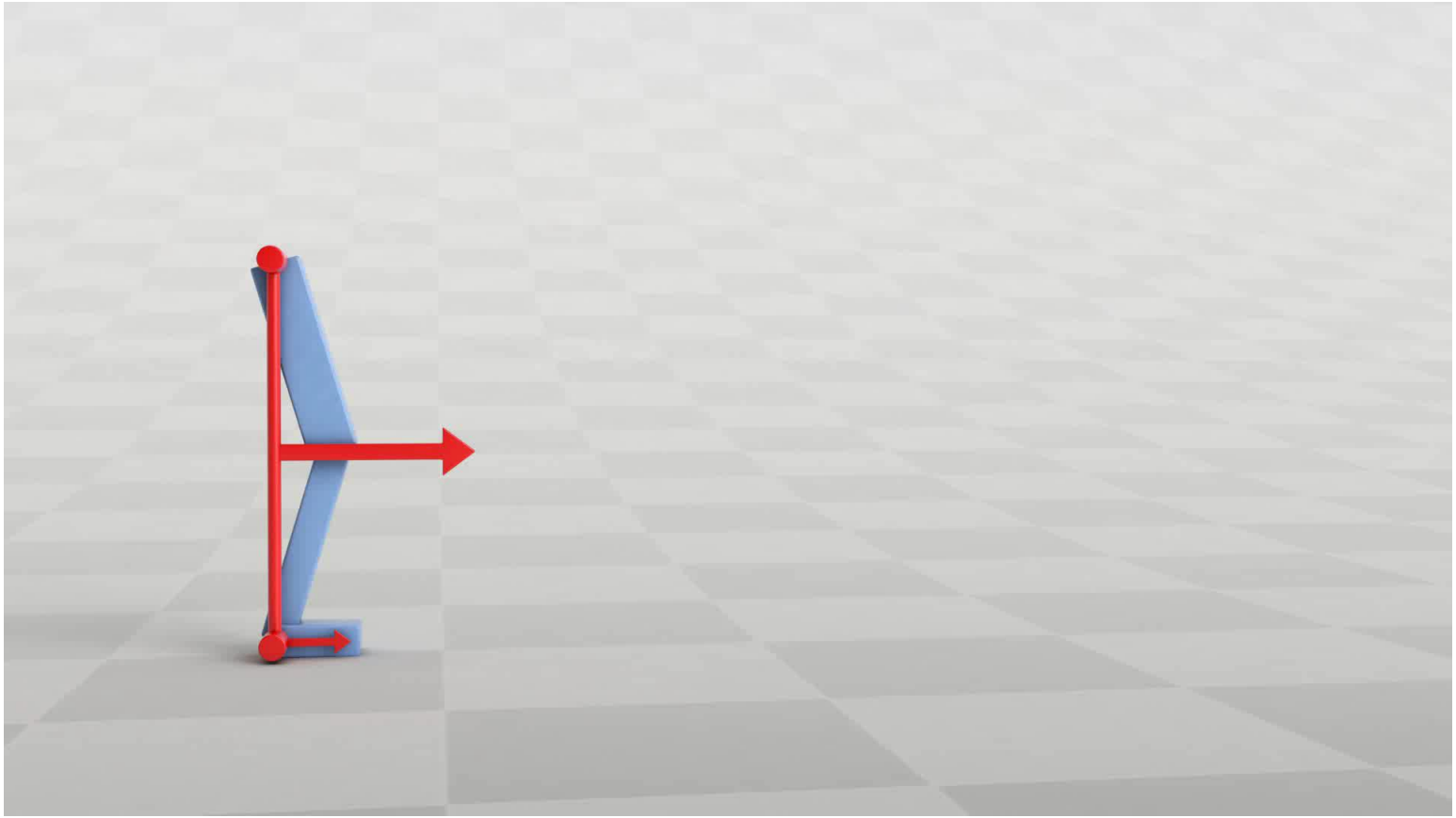
CHANGE THE WAY IT MOVES AND INTERACTS WITH THINGS

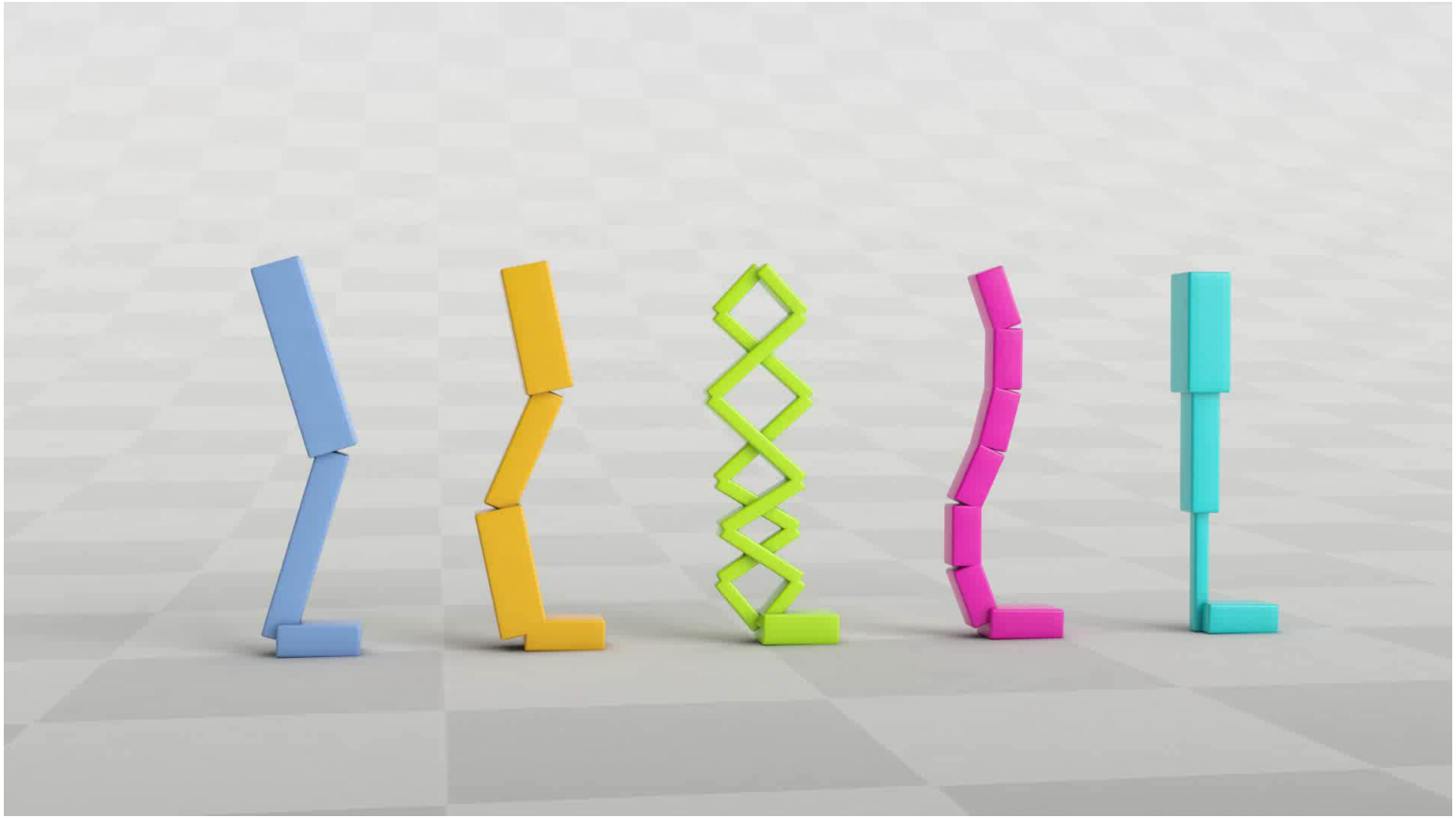
APPLY TO TARGET

Apply the new motion to source rig or to any other rig

APPLY RESULT IN RUNTIME OR BAKE NEW ANIM SET

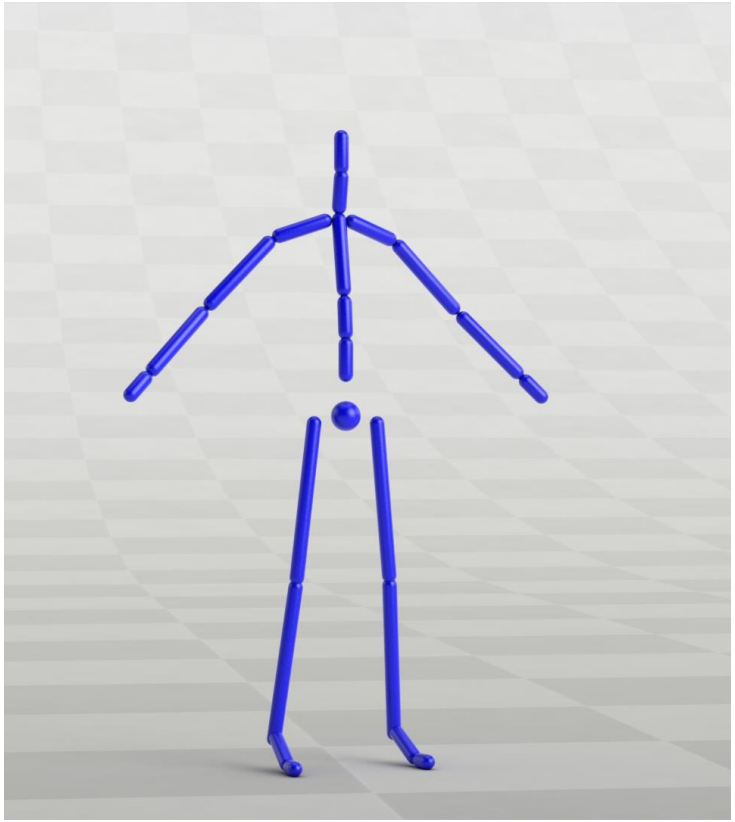






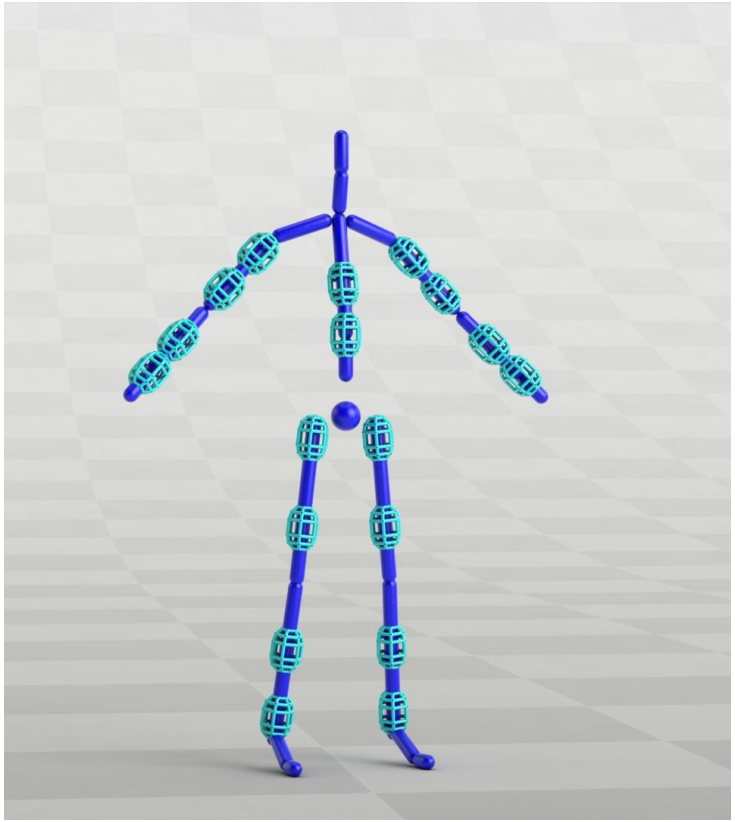
Common rig

- Active bones (hands, feet)



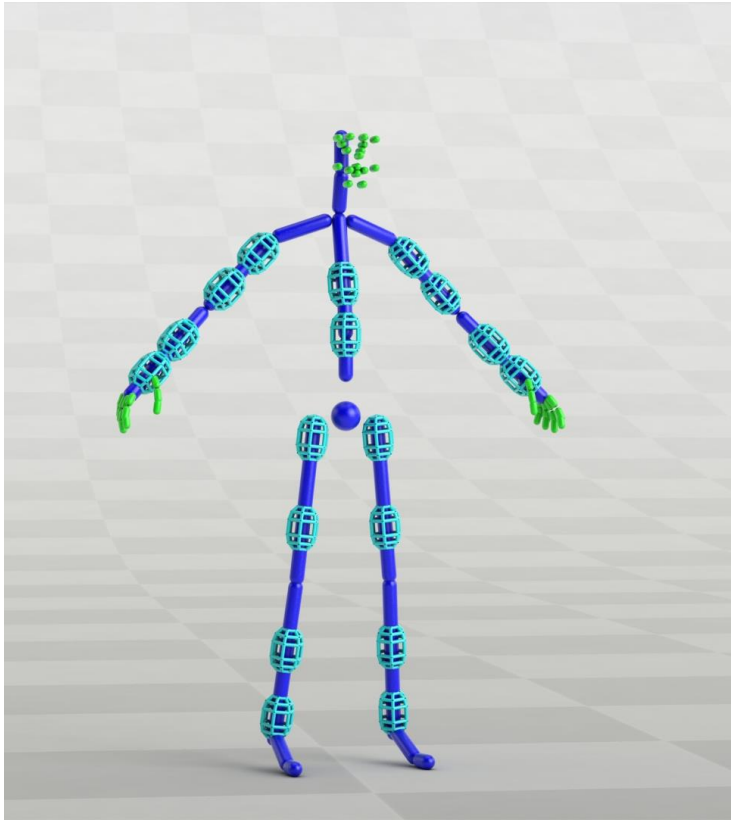
Common rig

- Active bones (hands, feet)
- Twist bones



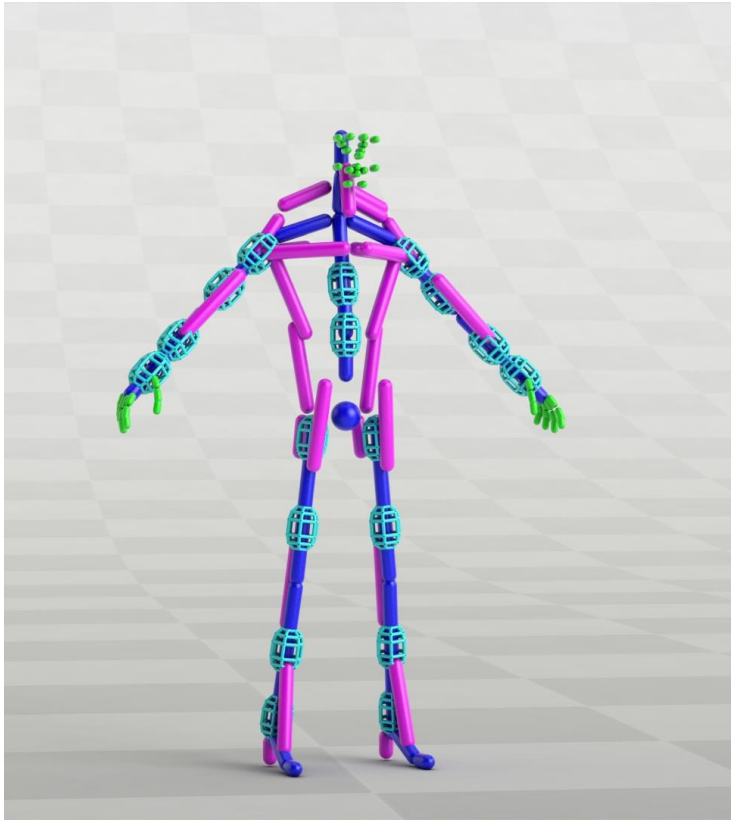
Common rig

- Active bones (hands, feet)
- Twist bones
- Small bones (fingers, face)



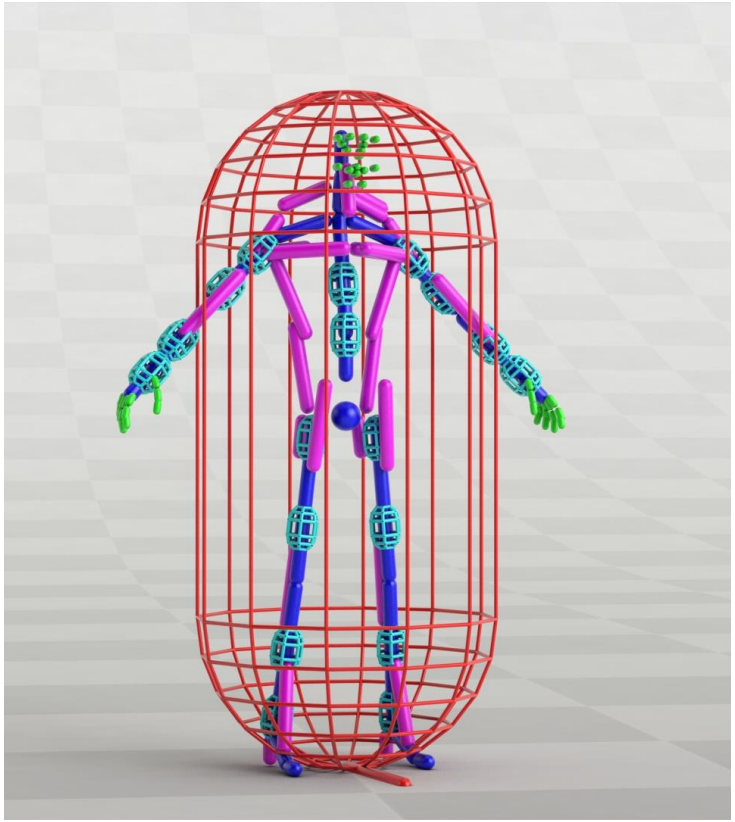
Common rig

- Active bones (hands, feet)
- Twist bones
- Small bones (fingers, face)
- Secondary, constrained (muscle)



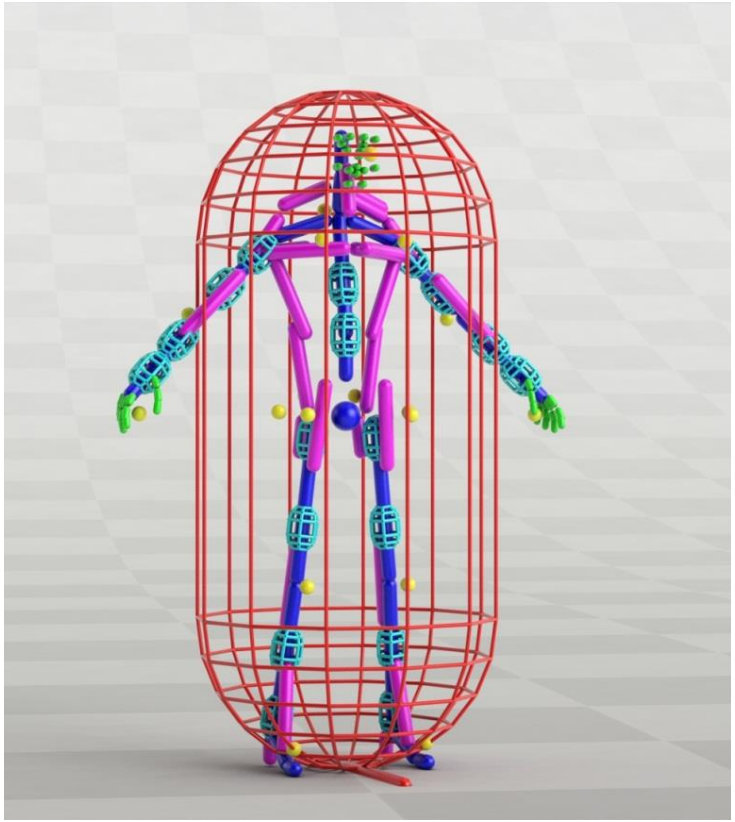
Common rig

- Active bones (hands, feet)
- Twist bones
- Small bones (fingers, face)
- Secondary, constrained (muscle)
- Collider/pivot (root, capsule)



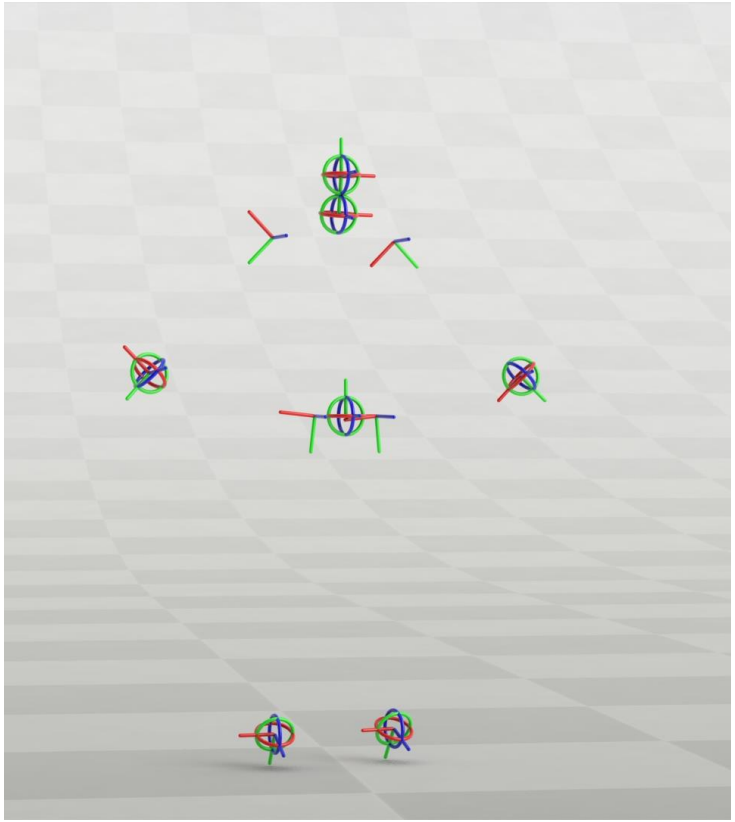
Common rig

- Active bones (hands, feet)
- Twist bones
- Small bones (fingers, face)
- Secondary, constrained (muscle)
- Collider/pivot (root, capsule)
- Prop attachment nodes (guns)



IK Rig

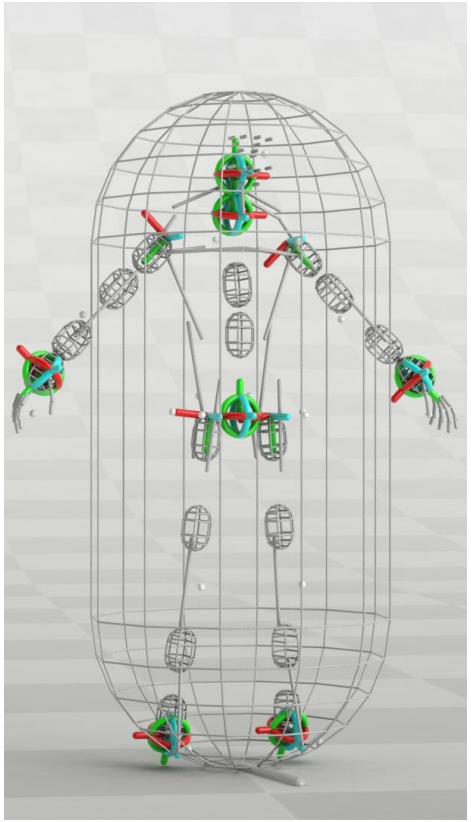
- Active bones – full body IK



IK Rig Definition

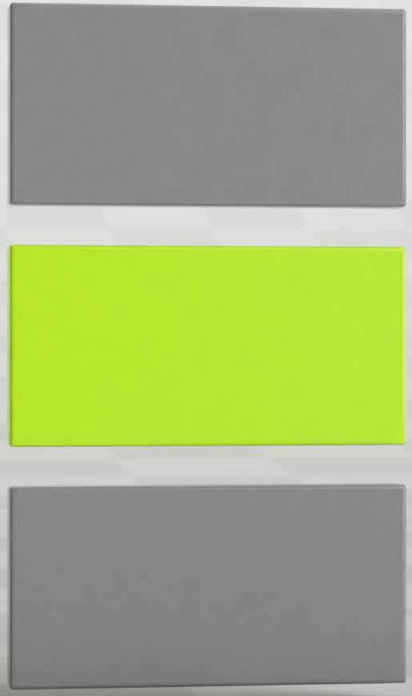
- Active bones – full body IK

- Twist bones, small bones, secondary bones, collider, pivot, prop nodes – **added and constrained directly in engine**



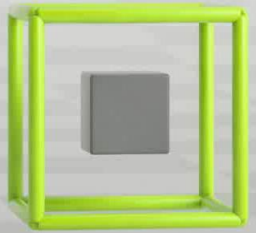
Position

Orientation

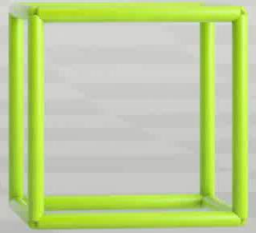


LookAt

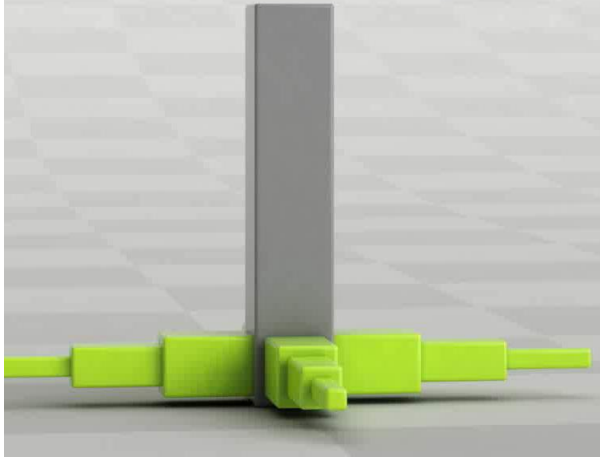
Spring/dampen

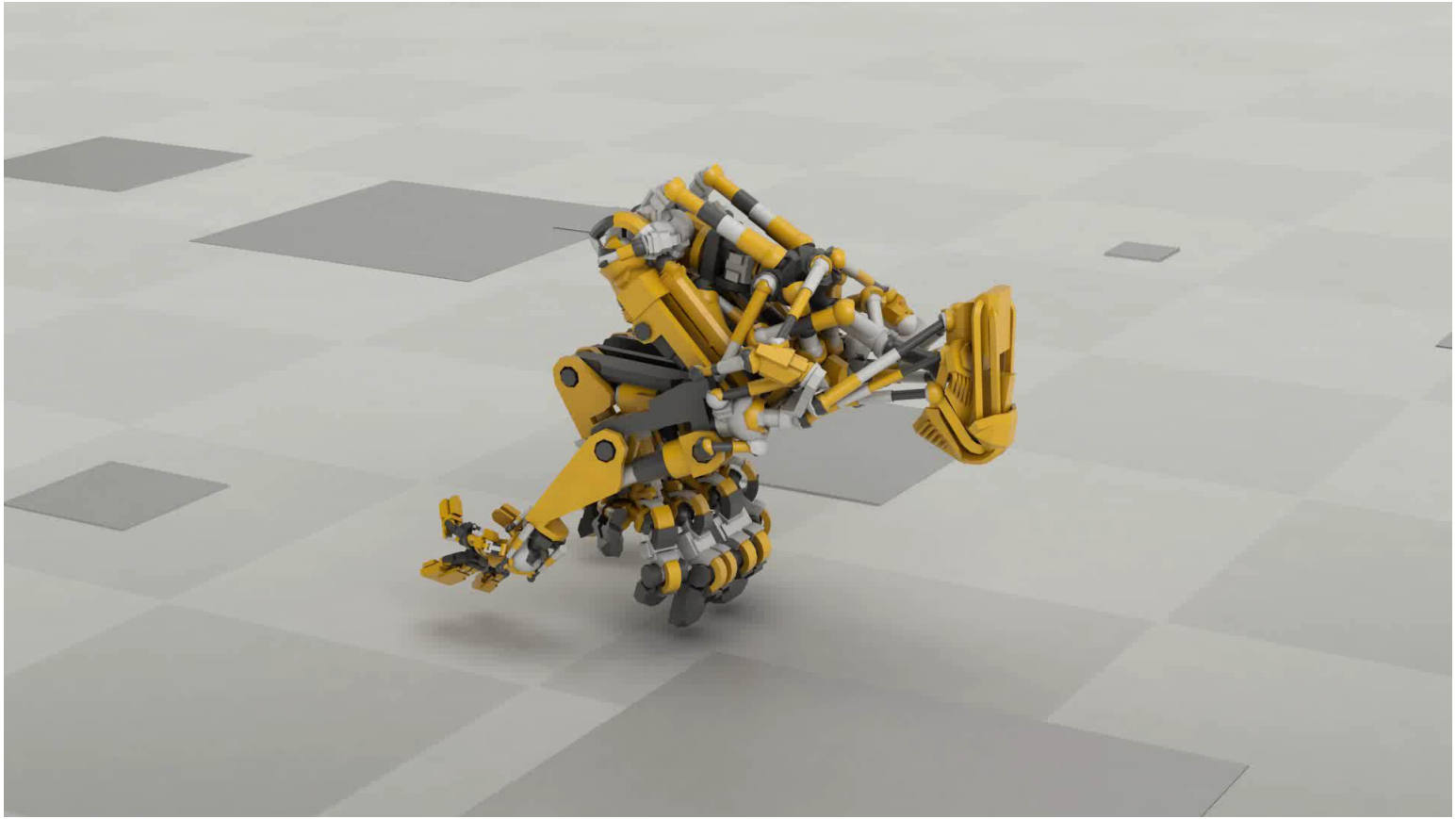


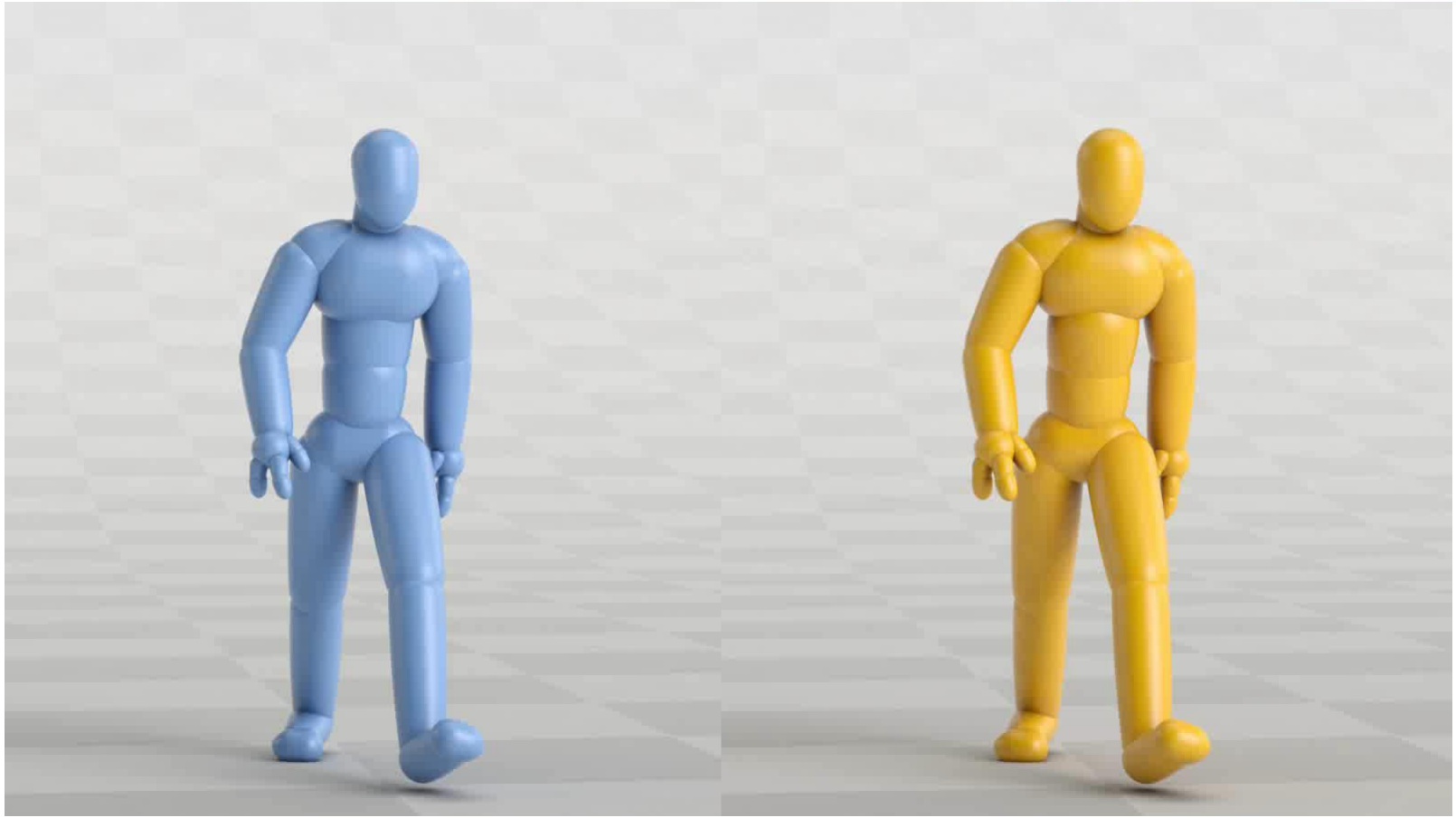
Tremble/curve

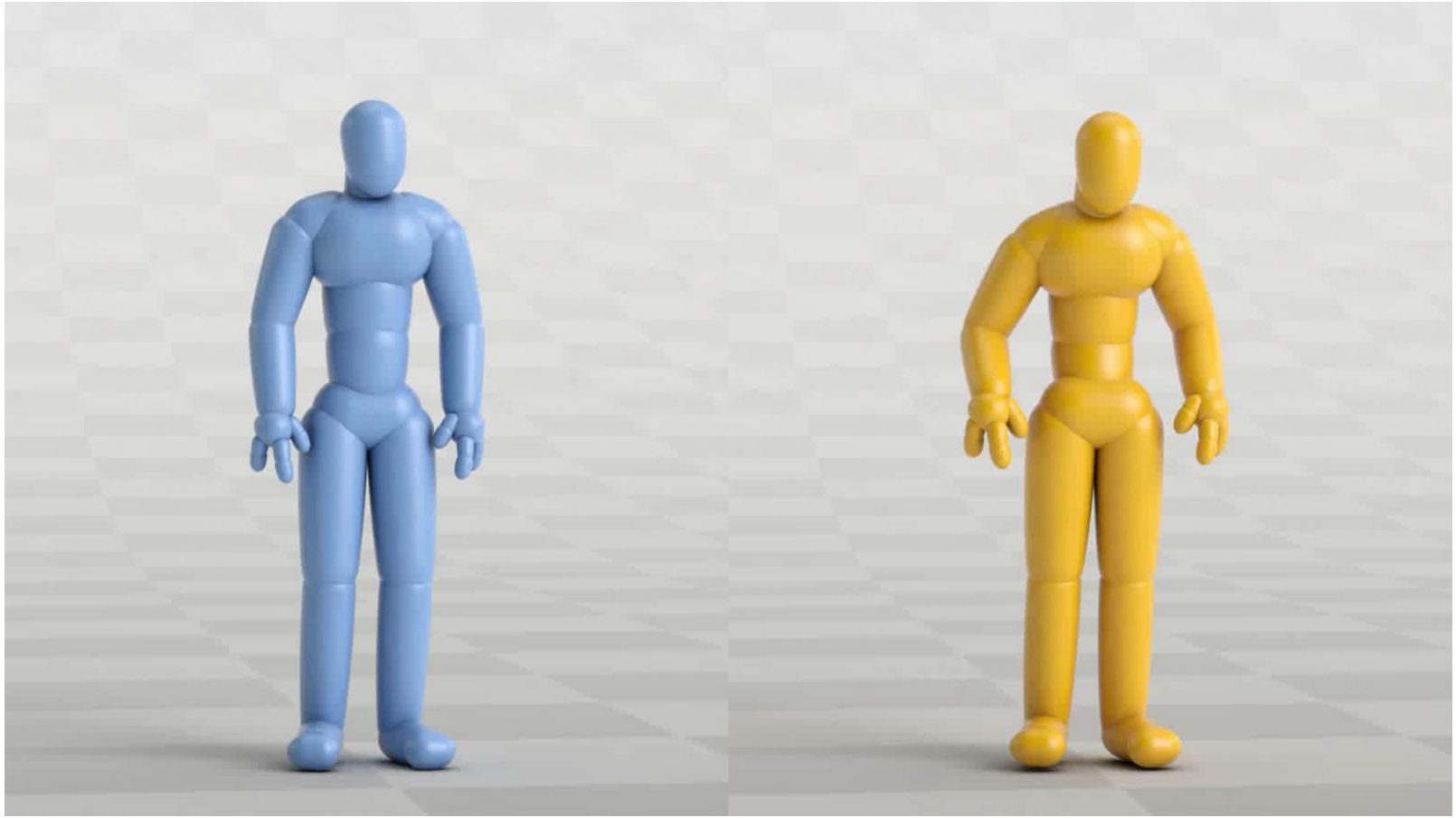


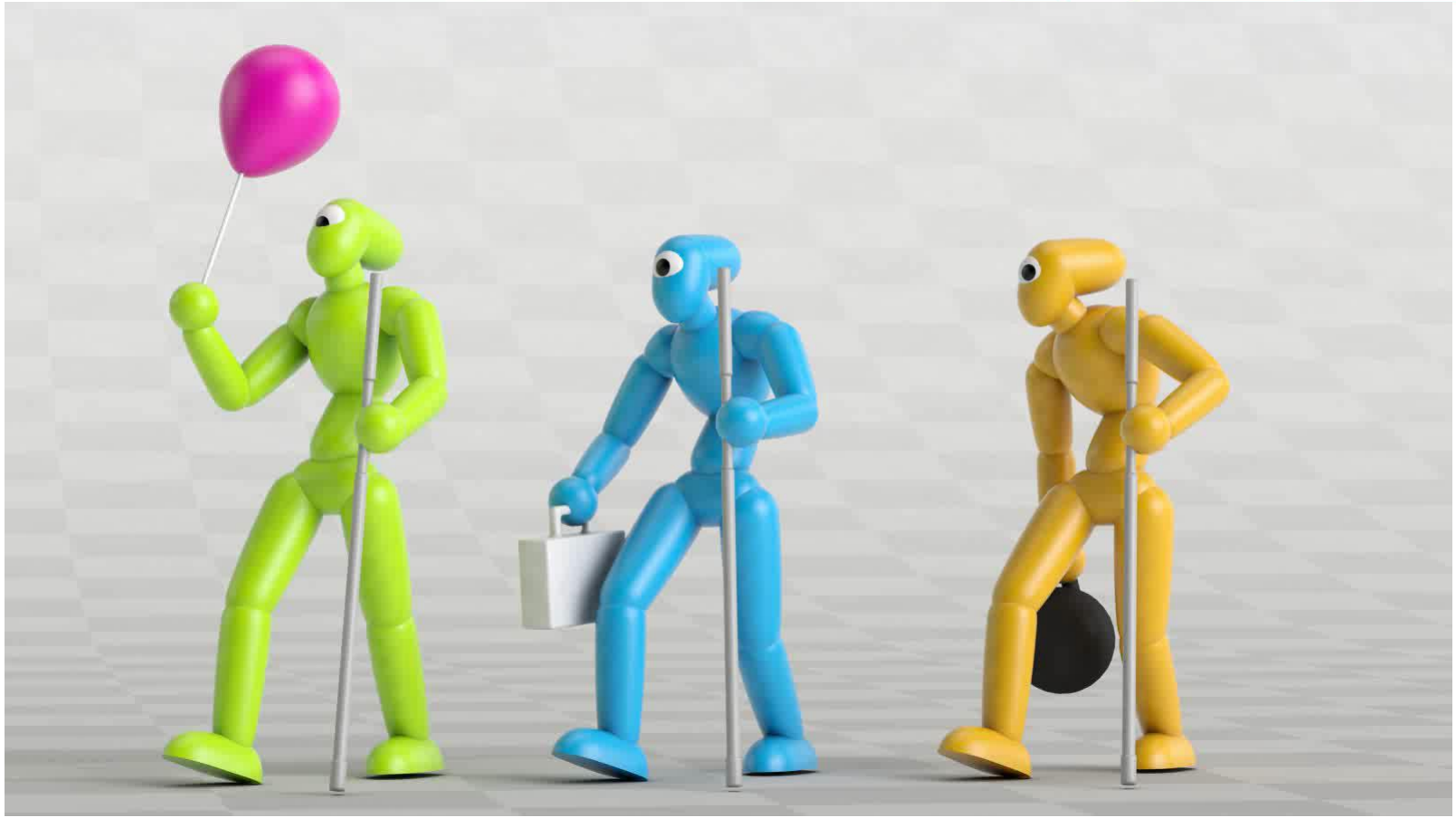
Driven

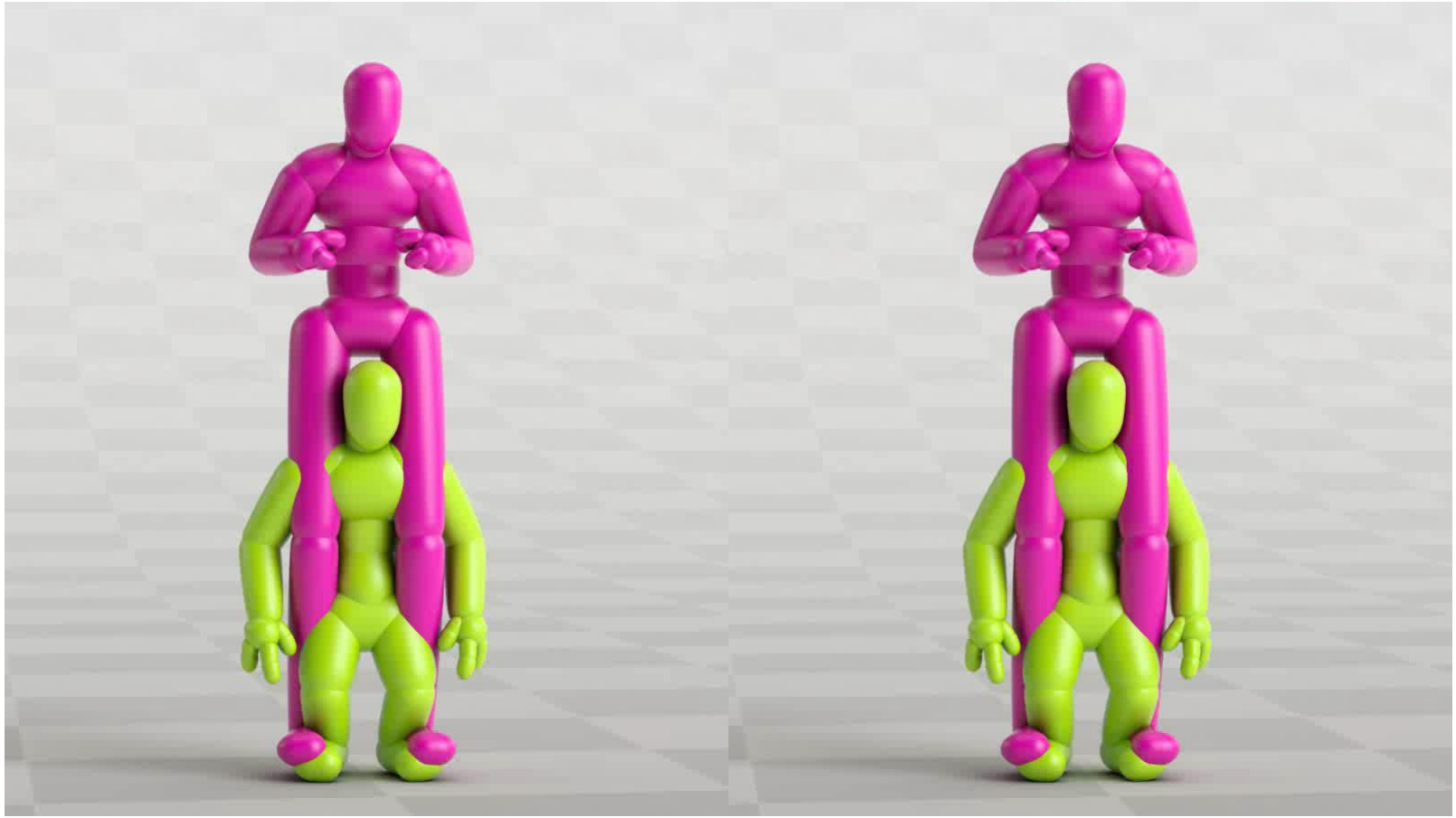


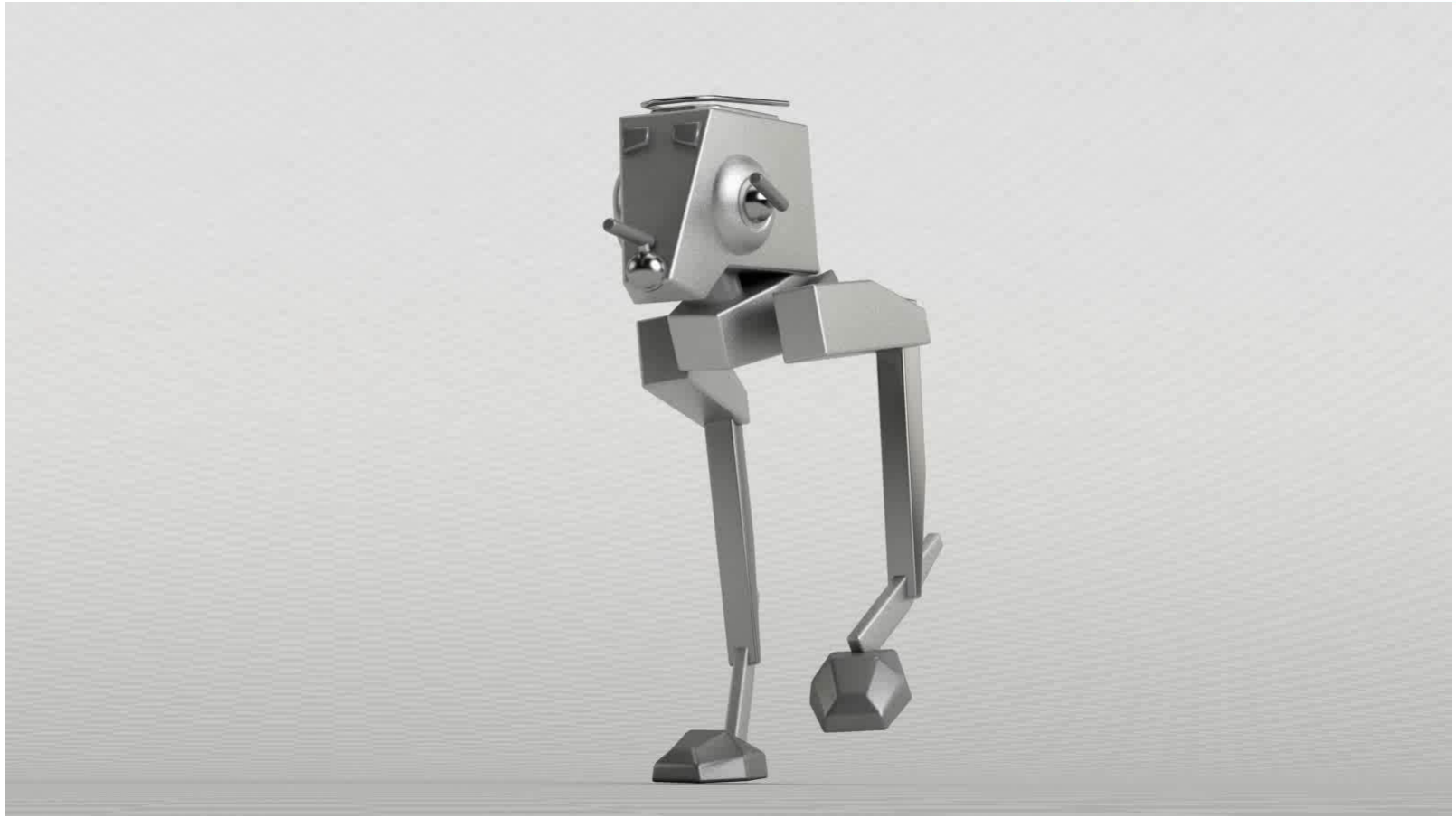


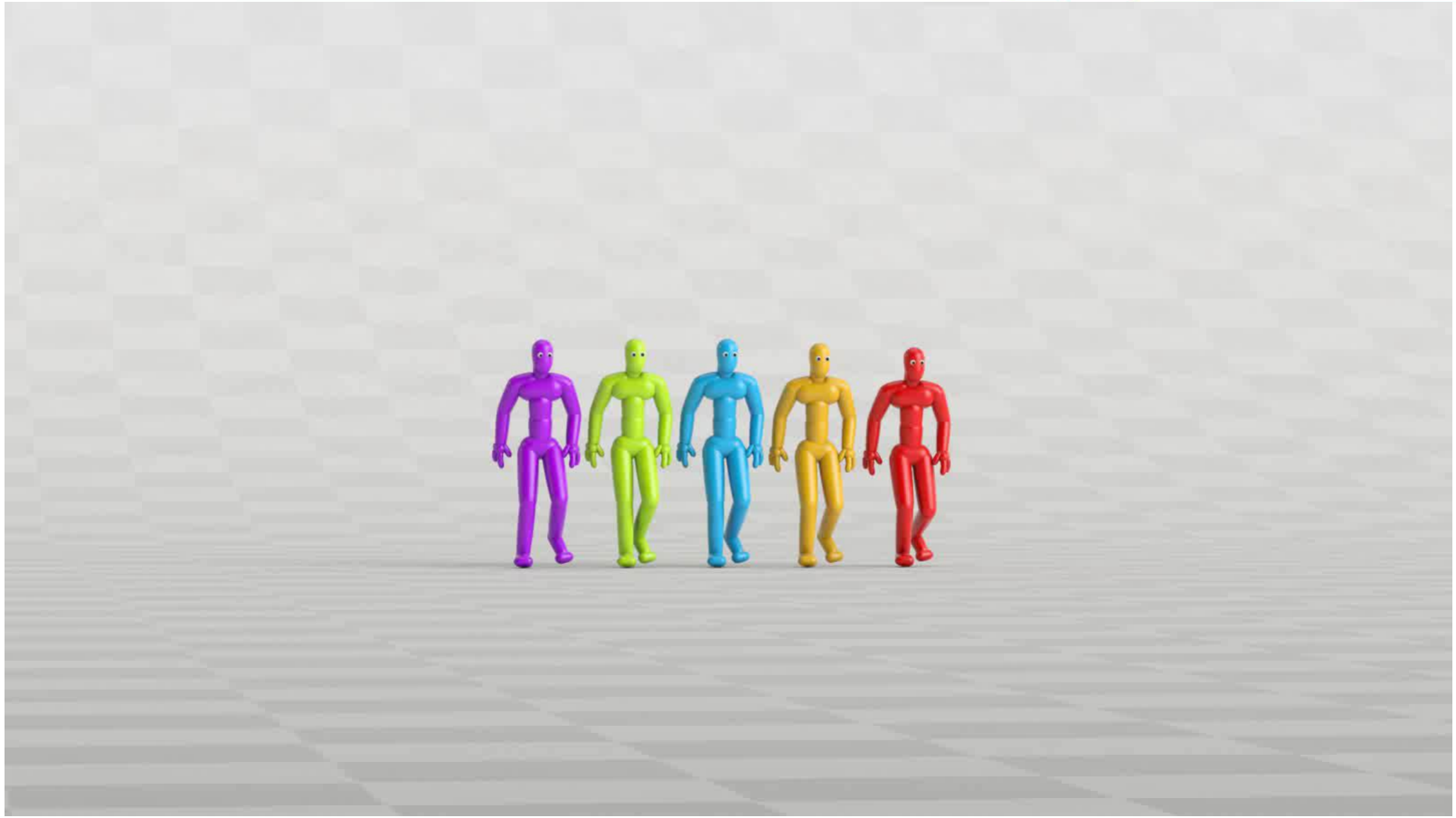


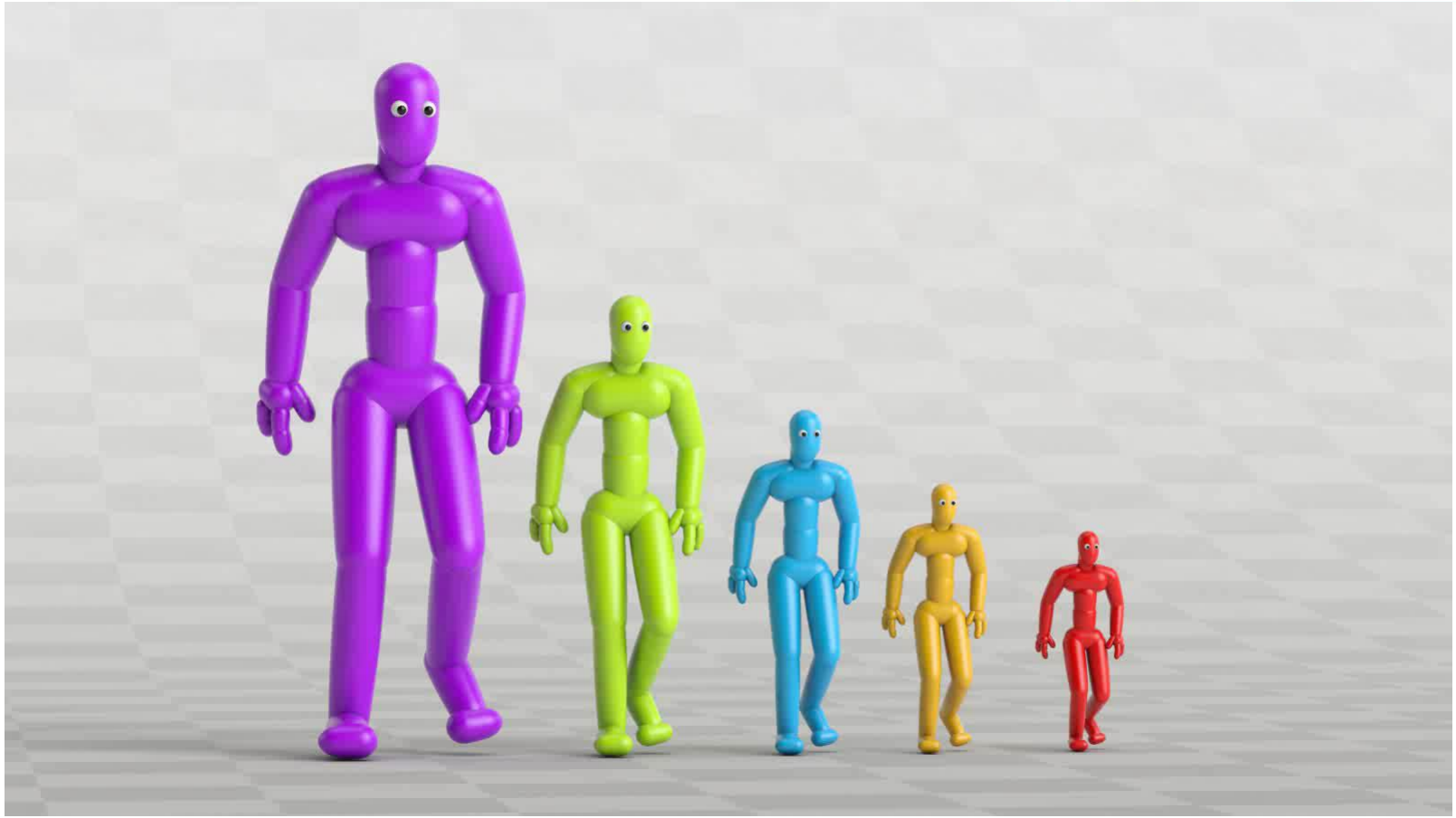






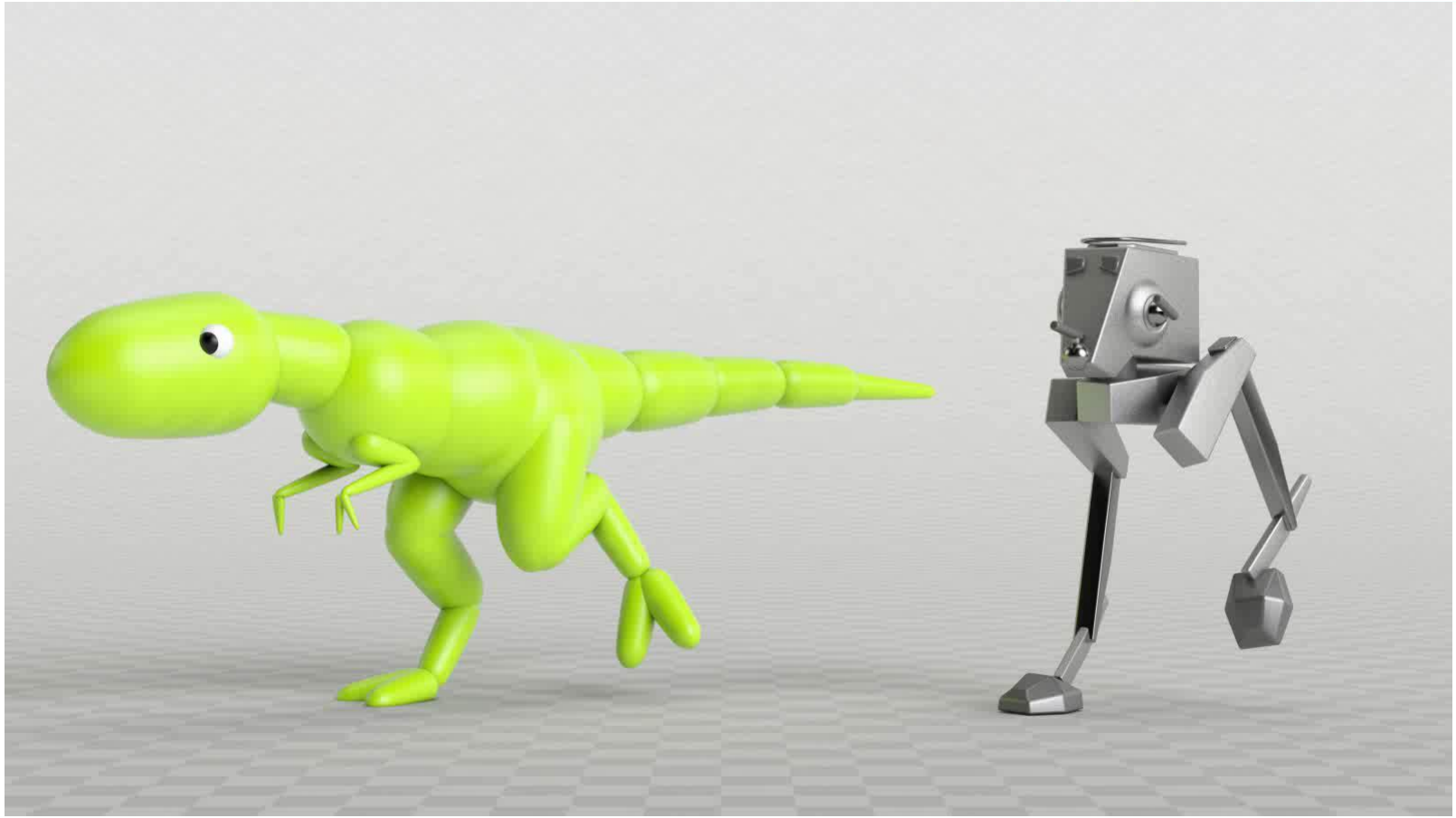


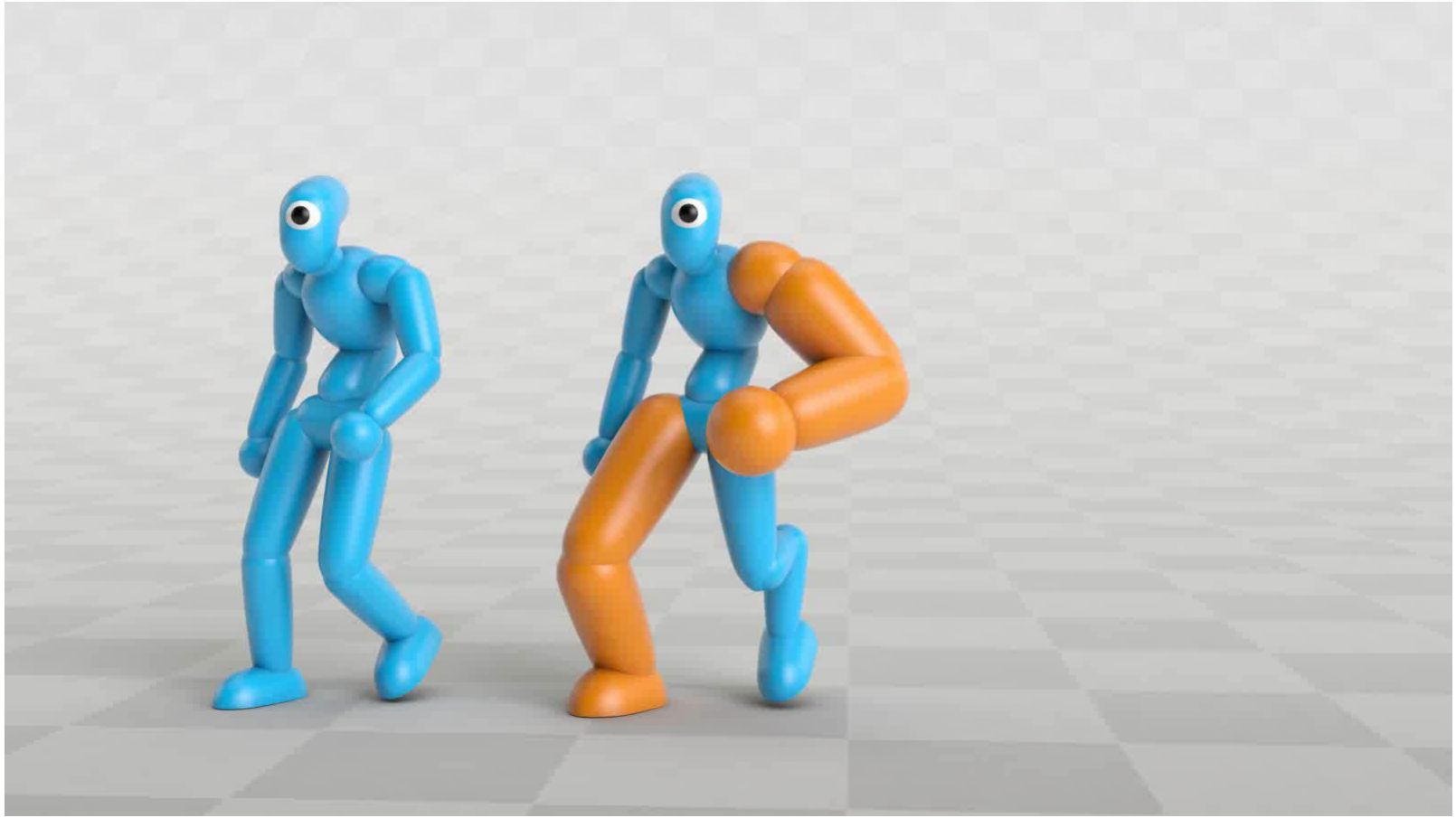


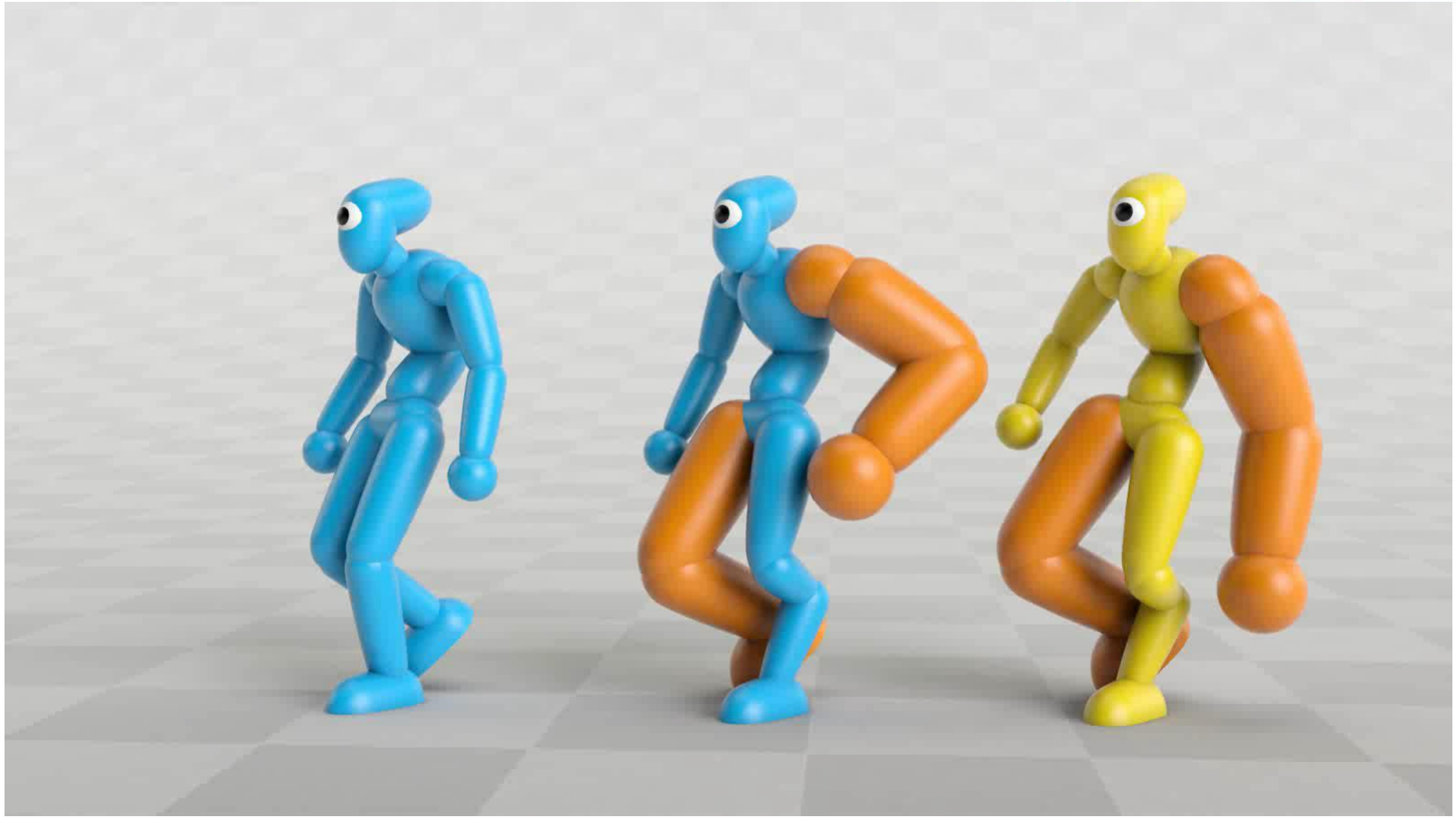


Any video game

Any real game





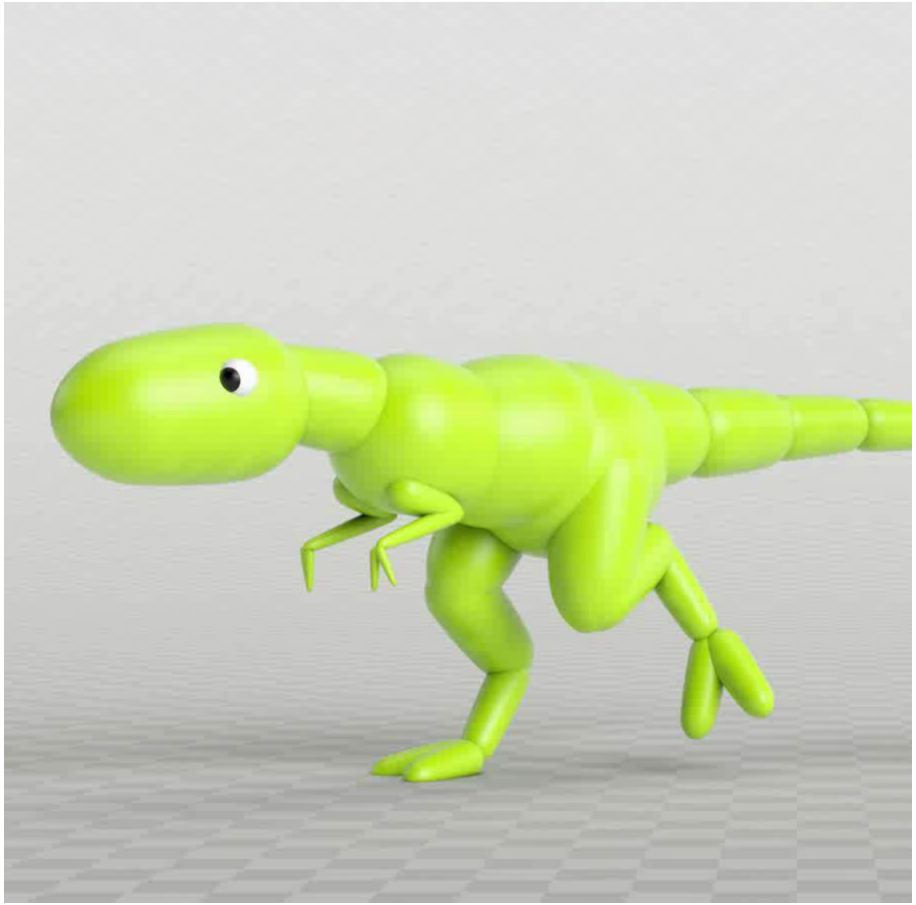


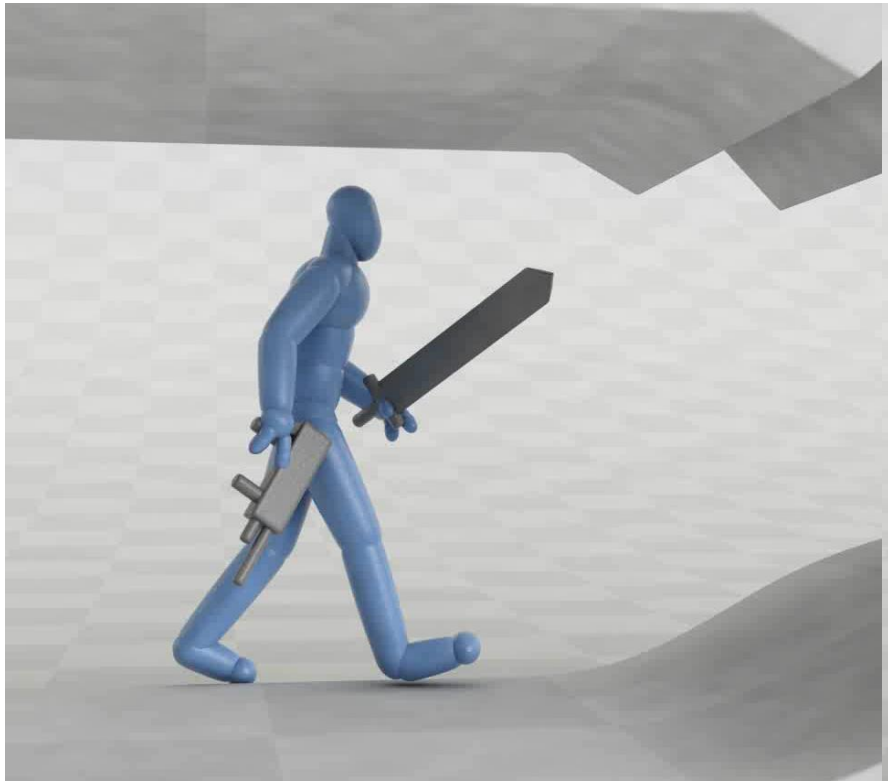
but they'll never take
our freedom?

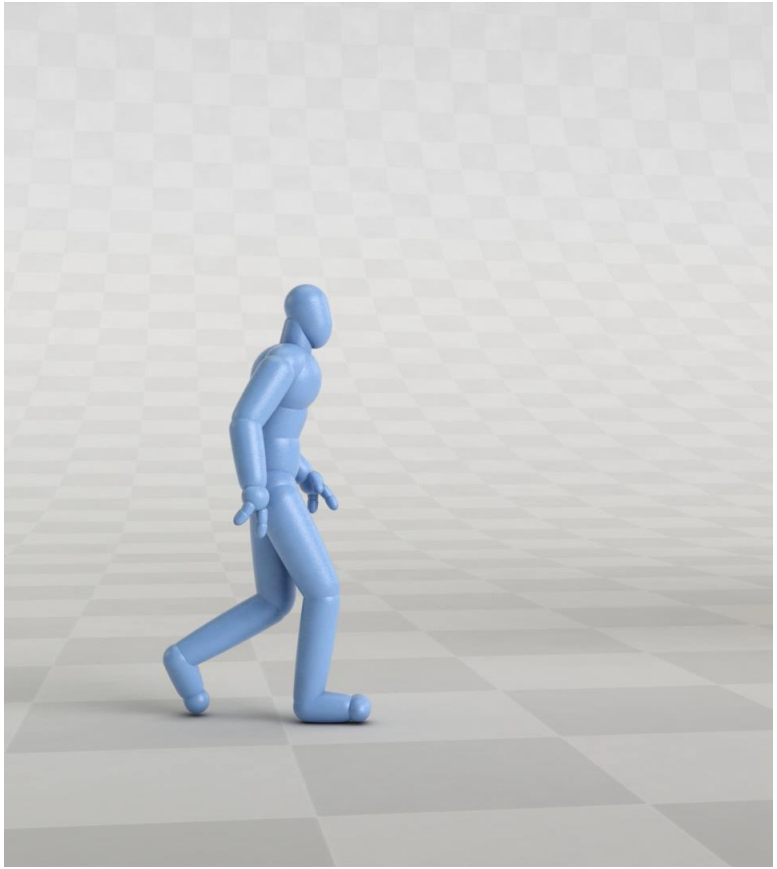
+

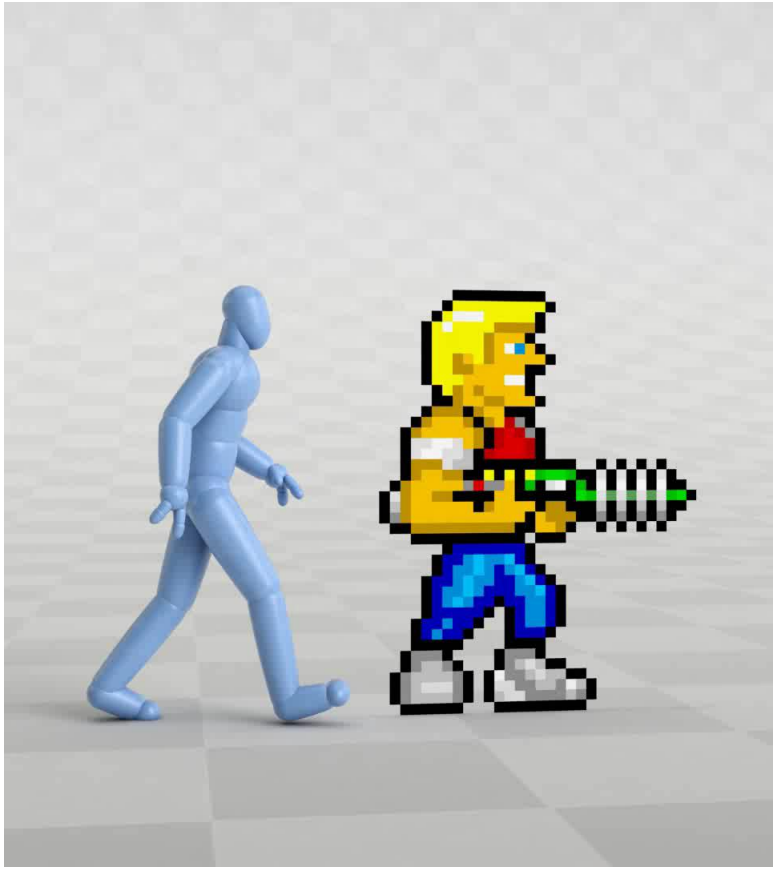
So far..

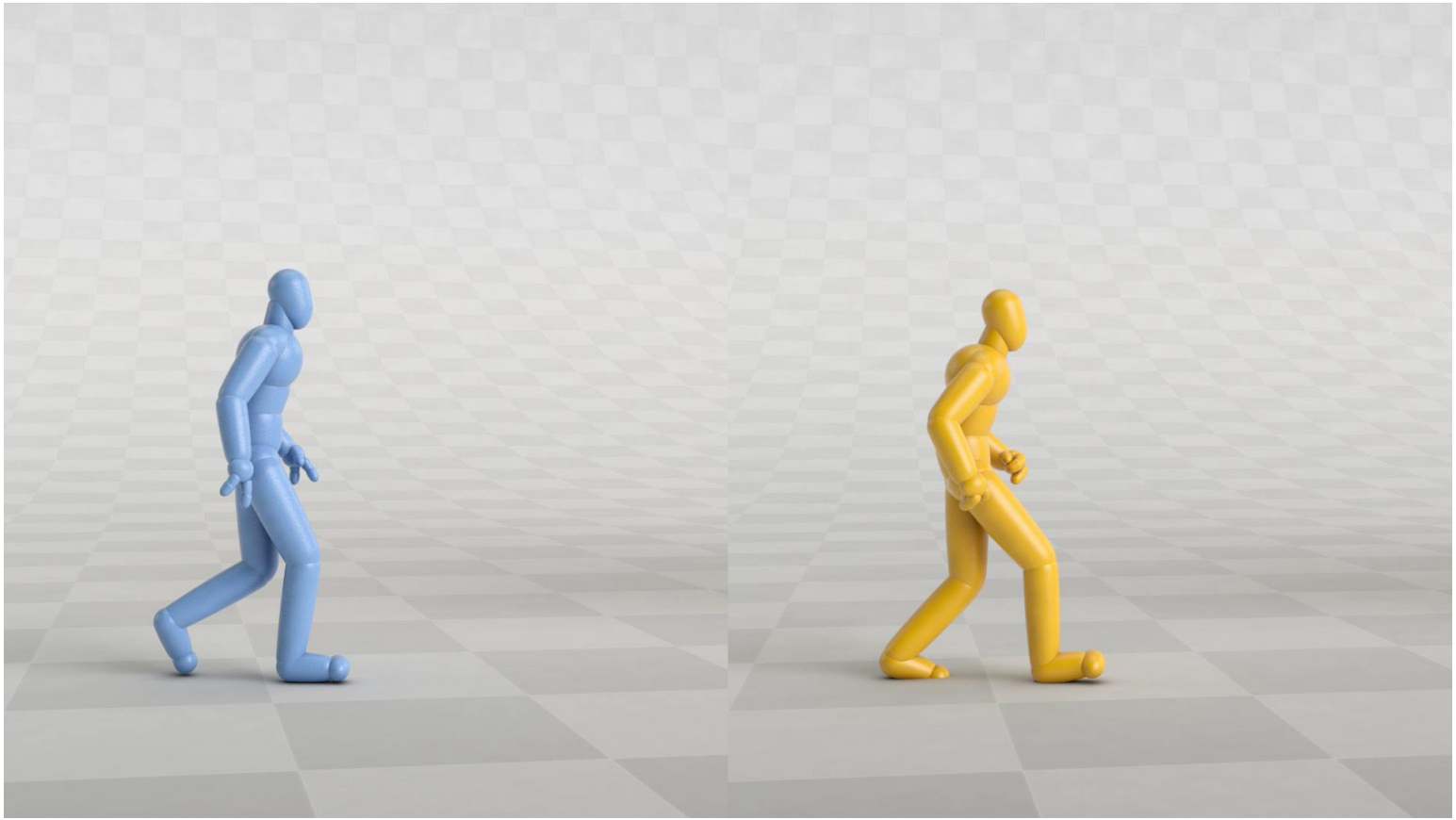
- ✓ Style modifications
- ✓ Scaling characters
- ✓ Changing proportions
- ✓ Prop interaction
- ✓ Speed modification

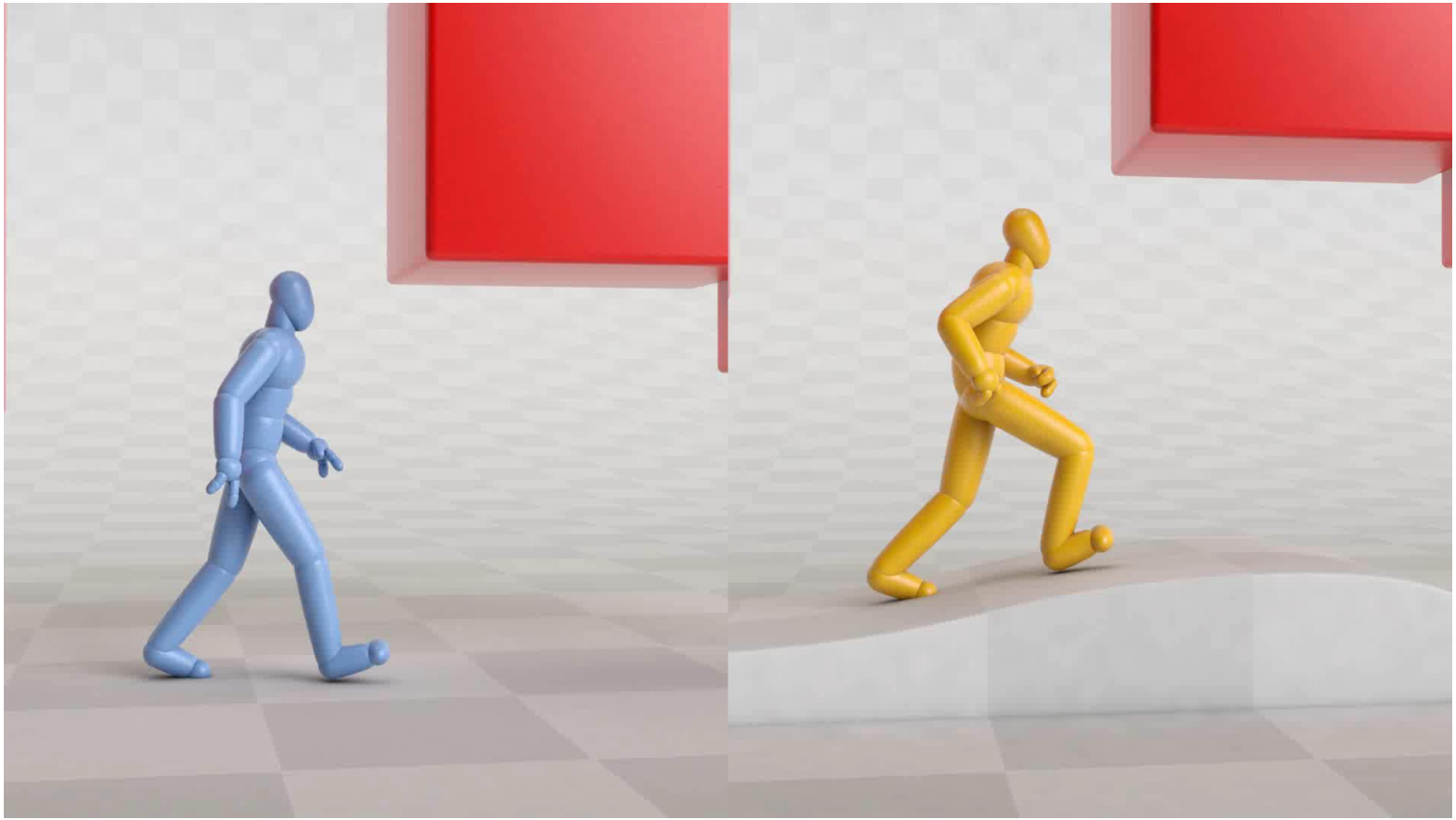


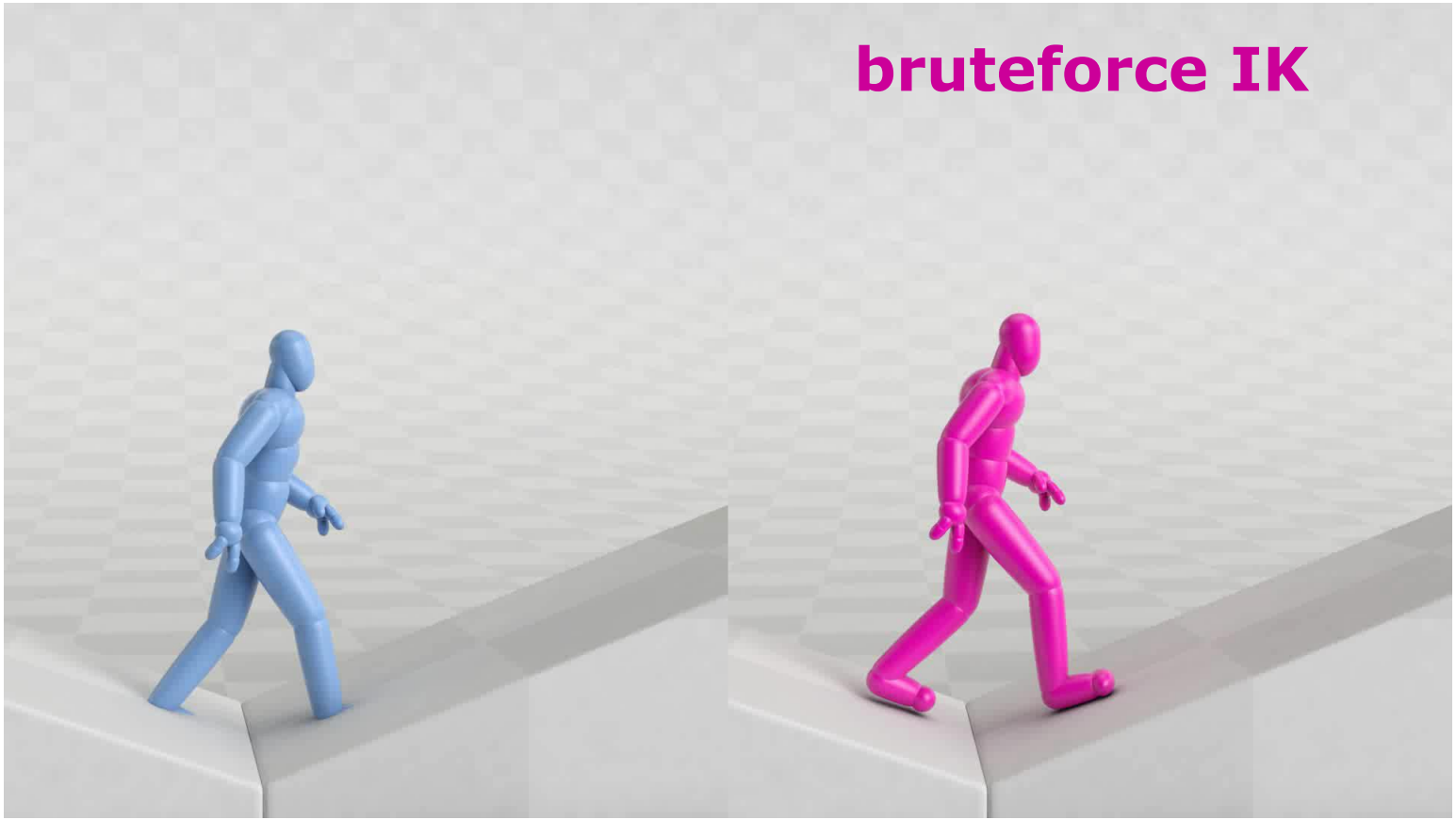


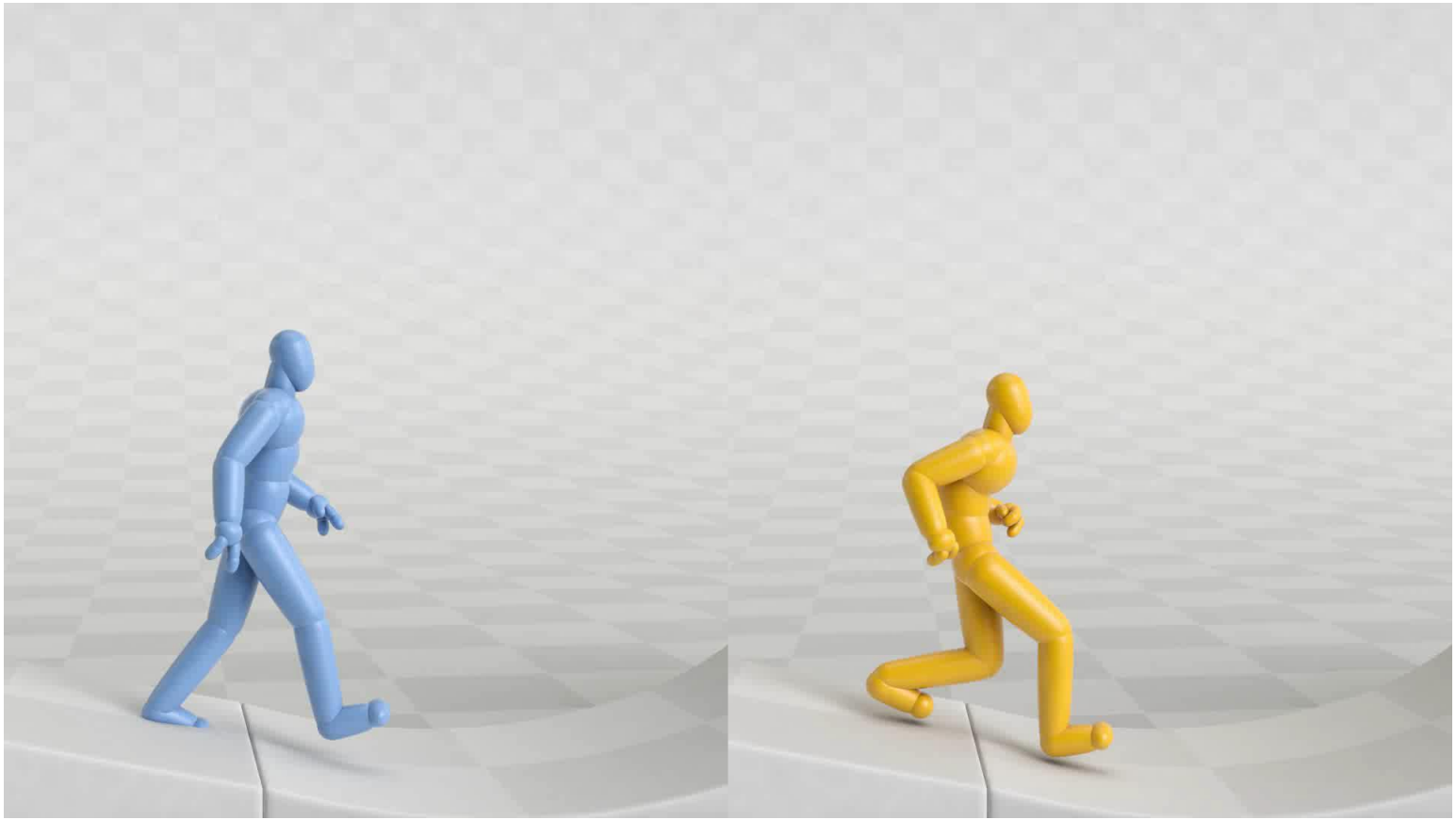






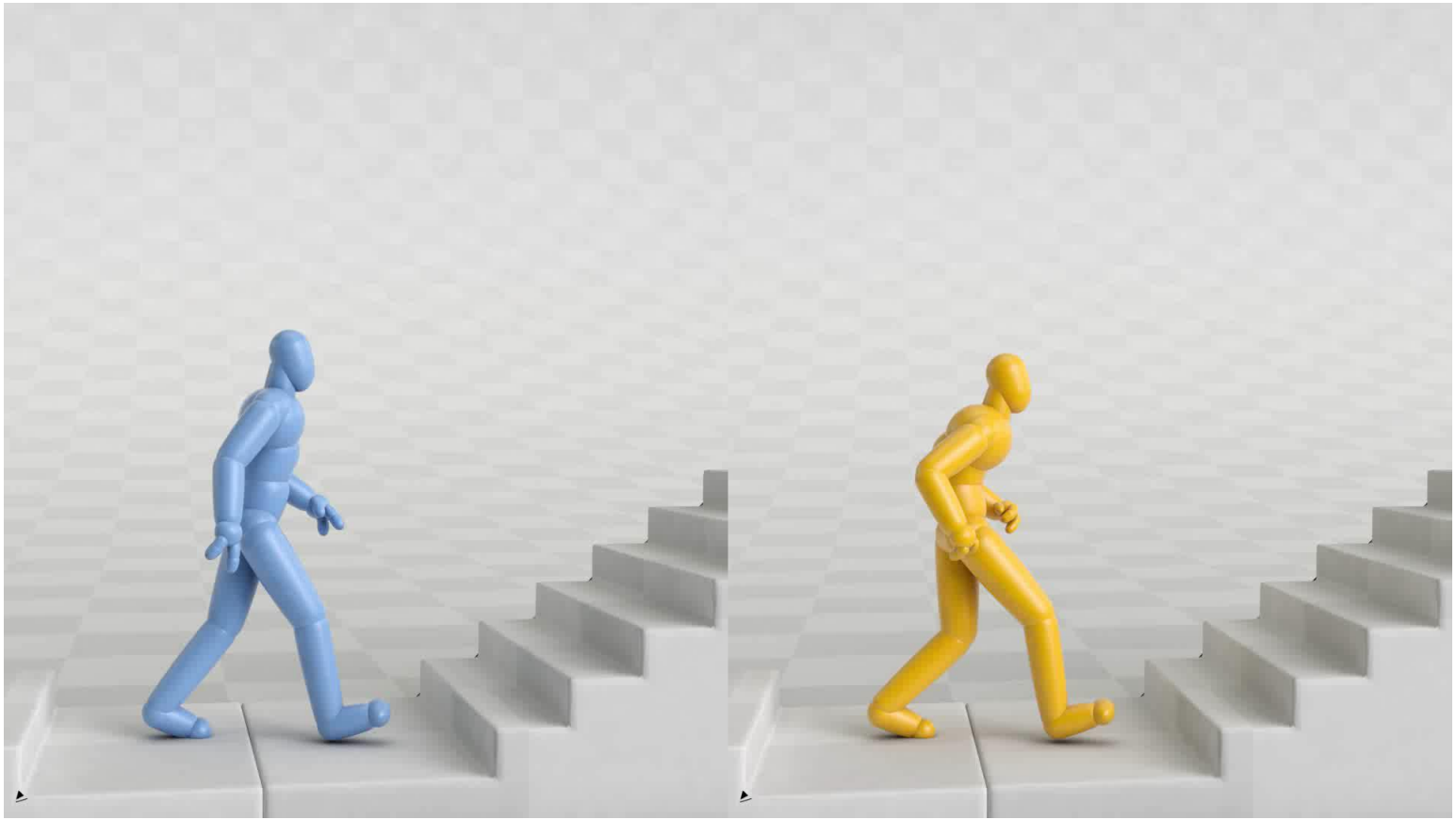


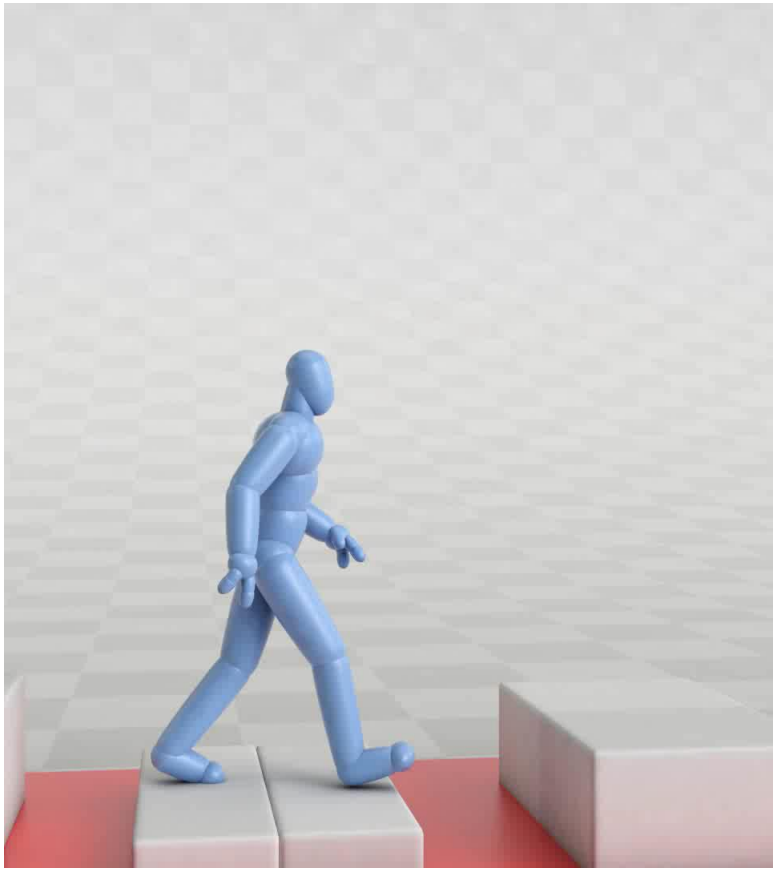

bruteforce IK

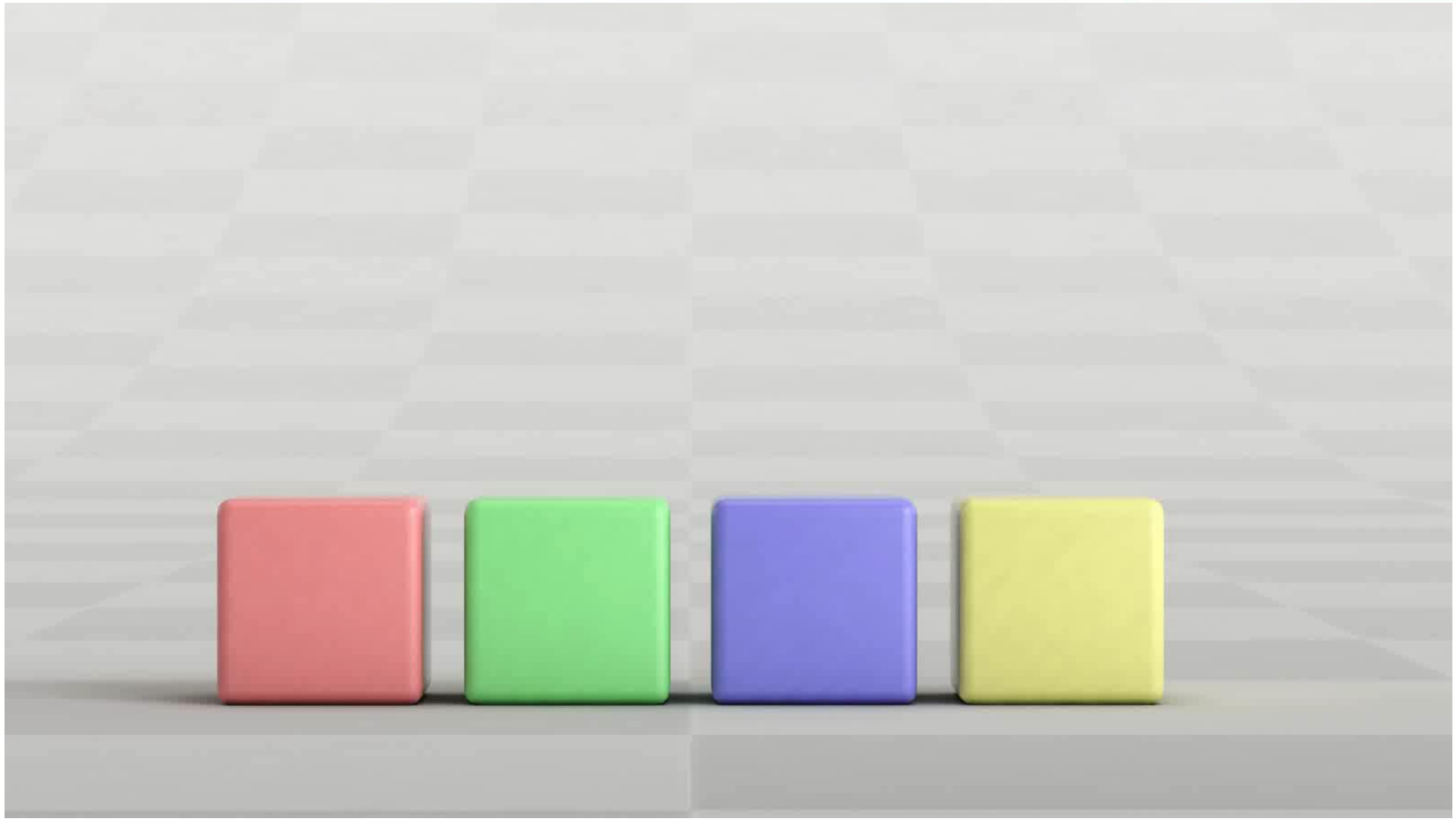


Nostradamus mode

- Bake footstep data with animation
- Trace new desired foot placement positions
- Reconstruct footstep curves



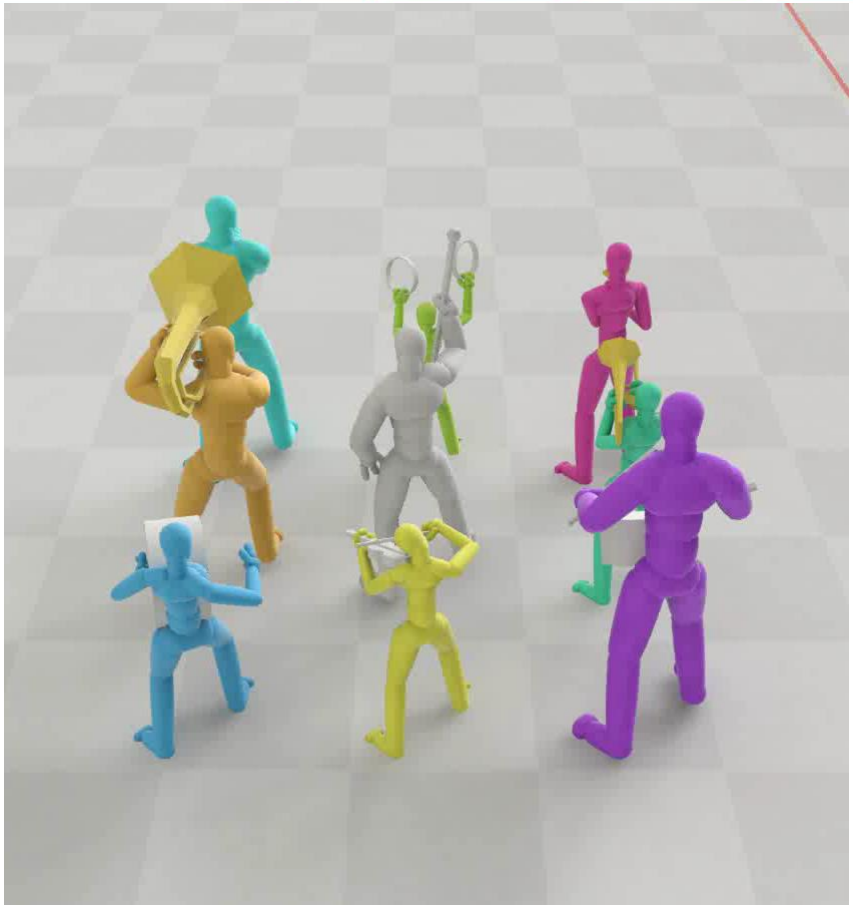


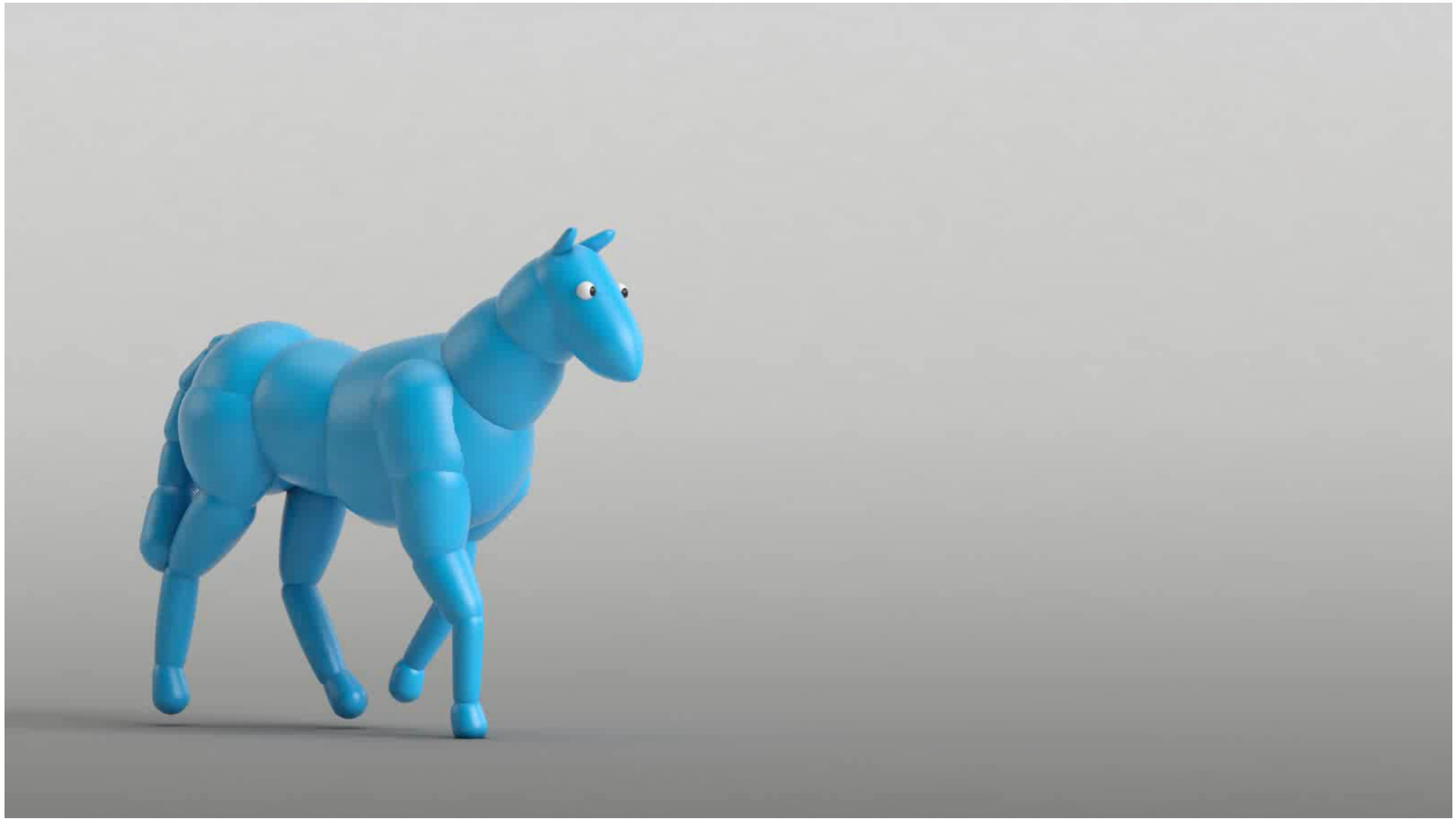


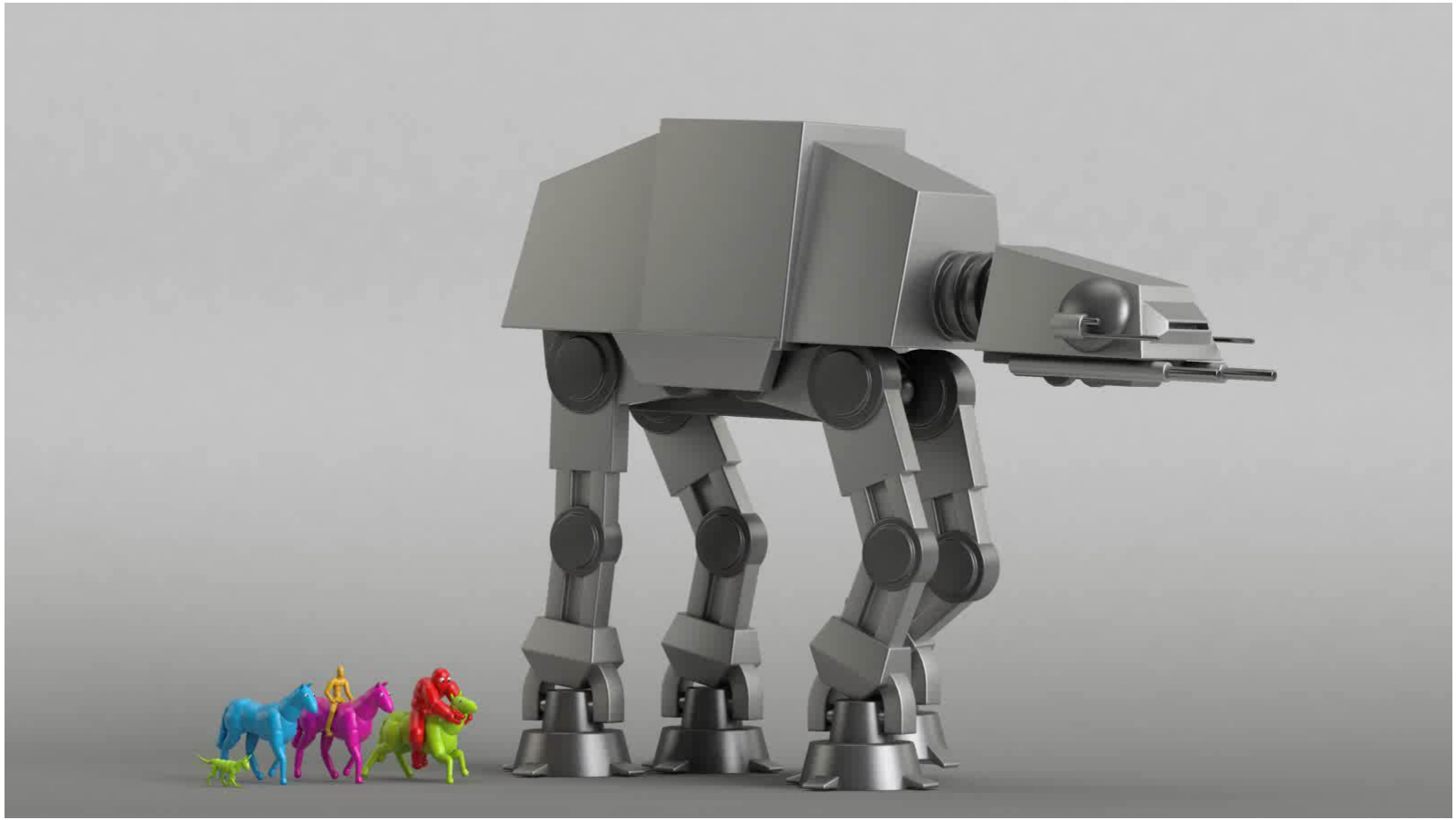
Marching Band

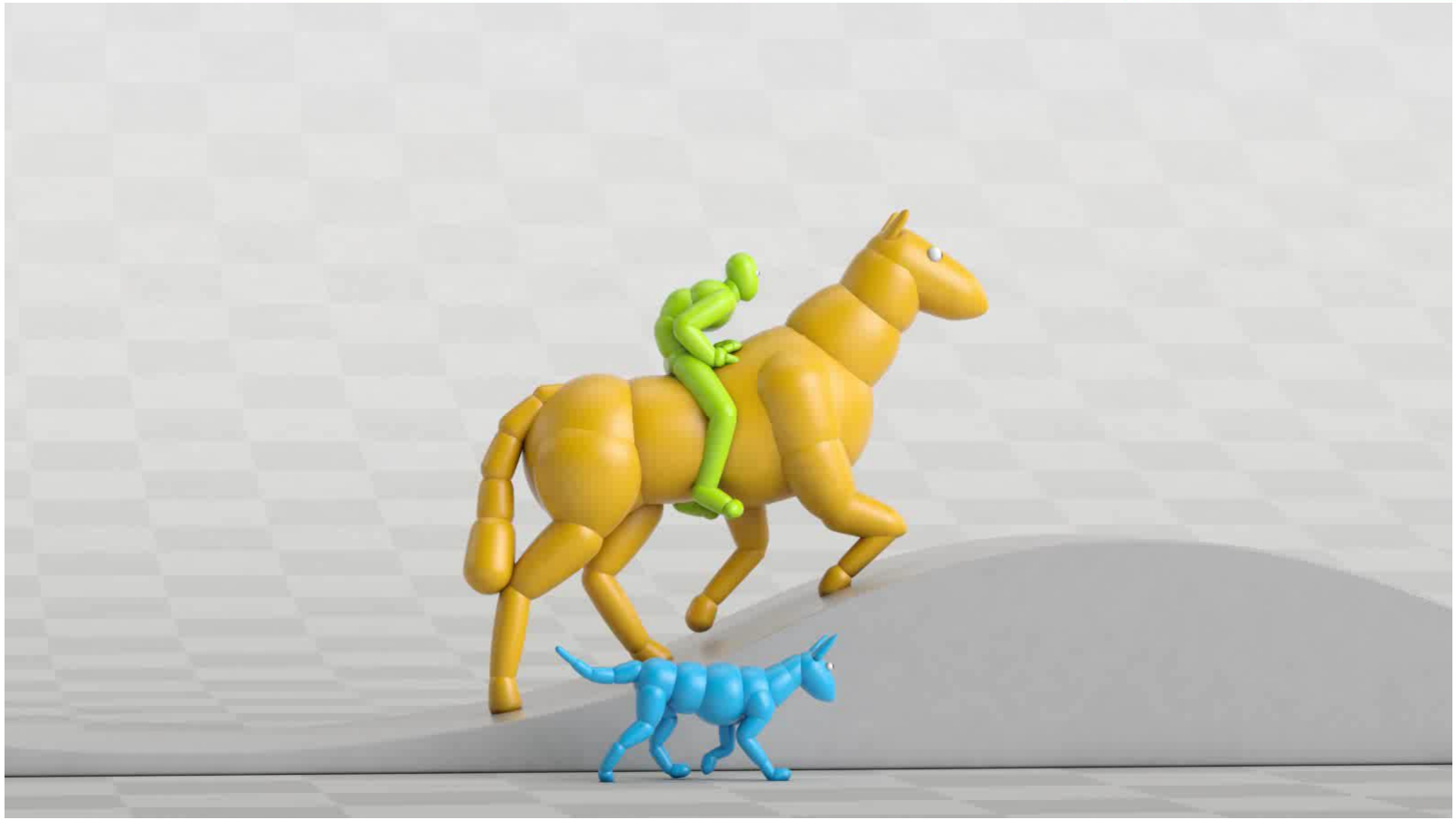
- 9 characters
- male and female
- 9 scales / proportions
- 9 animated props
- synced to tune
- crouching, climbing

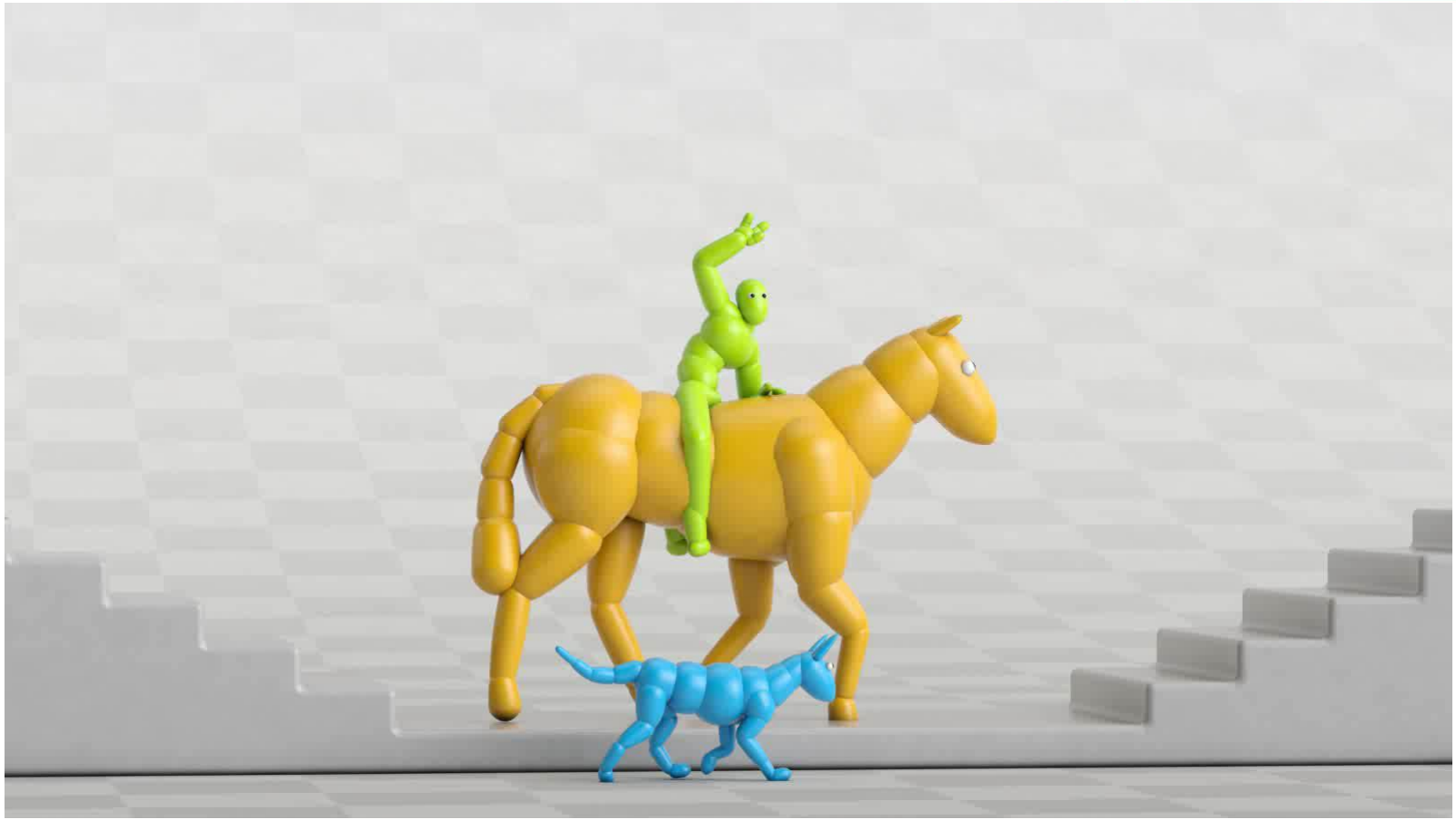
Time to make: **1 day**











Production: WHY

- Character versatility
- Content on demand
- Fast iterations
- Cost allocation

Production: HOW

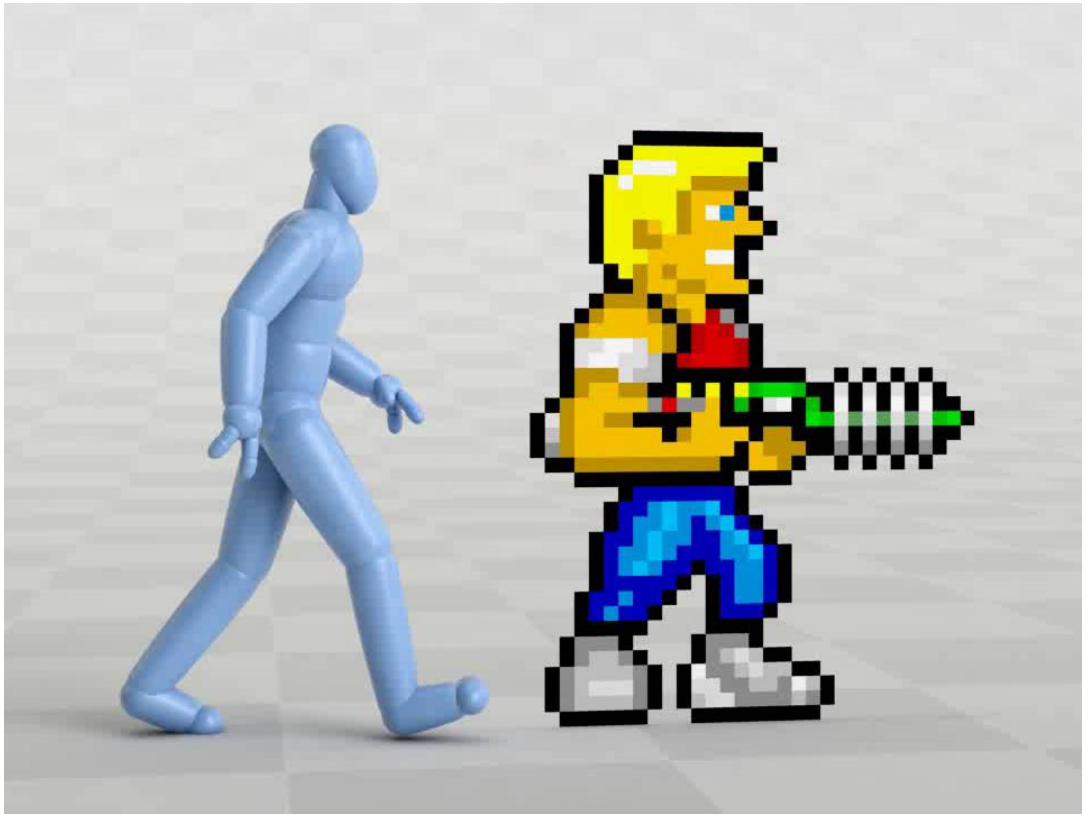
- Character artists
- Riggers and tech
- Animators
- Designers / Creative Directors

Production: WHEN

- Early
- but SOON

Production: NO-NO's

- OC mechanics
- Massive strategies
- Solo games



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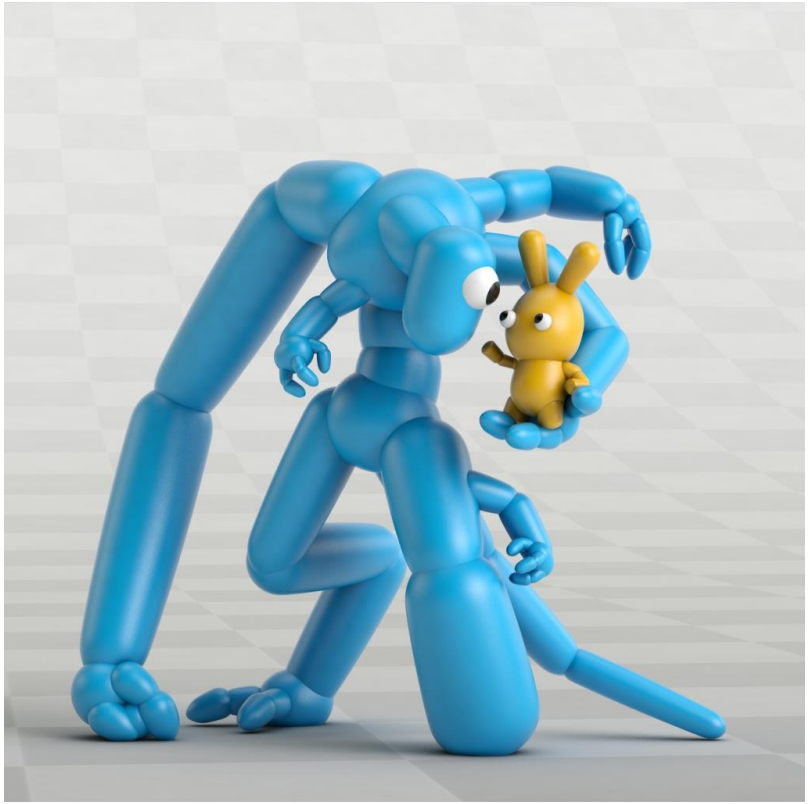
- What stage are you at?
- How resource-heavy is it?
- Where can I download it?



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Credit due

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West Hall, 2nd floor Ubi lounge TOMORROW 3pm–4pm