



Tricks of the Trade 2016

Alex M. Lehmann, Art Director, Riot Games

Simon Unger, Sr. Animator, Phoenix Labs

Amy Drobeck-Jones, Sr. Animator, 5th Cell

Jean-Denis Haas, Sr. Lead Animator, Industrial Light & Magic

Billy Harper, Lead Animator, Sucker Punch Studios

Jay Hosfelt, Lead Animator, Epic Games

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“Tricks of the Trade” Host

Alex M. Lehmann

Art Director, Riot Games
animator for 10+ years

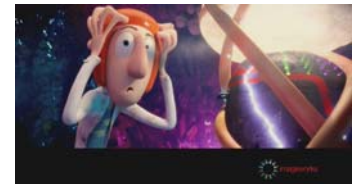


Riot Games, “League of Legends”

Sony Imageworks, “Cloudy with a Chance of Meatballs”

Microsoft, “Kodu”

4 years of working in Commercials & Feature Film in Europe





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Meet the panel

SIMON UNGER
Sr. Animator
Phoenix Labs

**AMY DROBECK-
JONES**
Sr. Animator
5th Cell

JEAN-DENIS HAAS
Sr. Lead Animator
Industrial Light&Magic

BILLY HARPER
Lead Animator
Sucker Punch Studios

JAY HOSFELT
Lead Animator
Epic Games



Why “Tricks of the Trade”?



Got it... so, how does it work?



Tips to get the most out of this...

NOTE TAKING

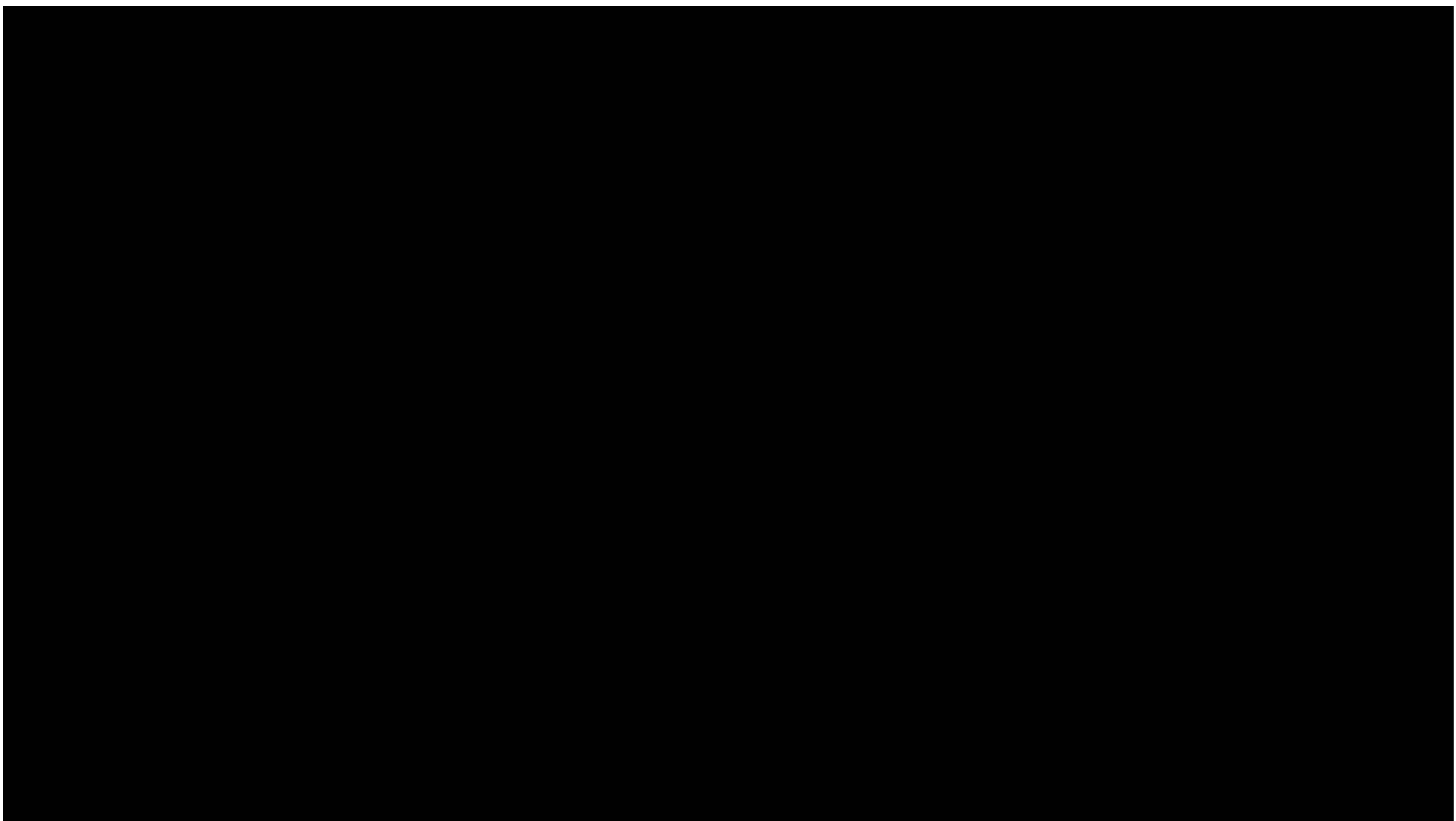


ENJOY THE RIDE



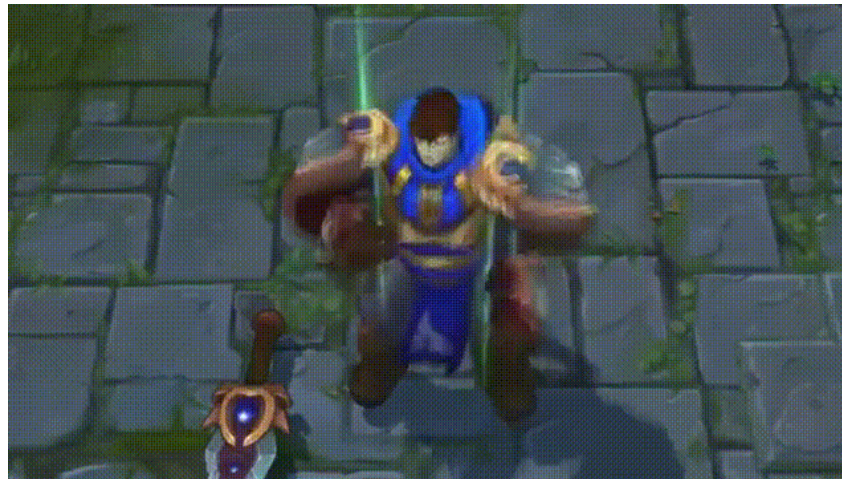
GDC VAULT



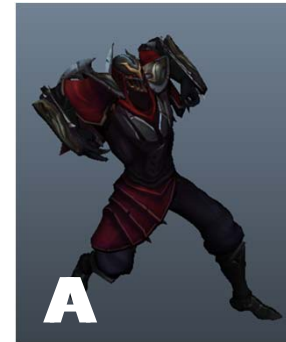


Trick #01

Fixing repetitive animation loops



Trick #01 – ABA vs ABCA



Trick #01 – ABA vs ABCA



Trick #02 – RESPONSIVE ANIMS



Trick #02 – RESPONSIVE ANIMS

IDLE

ATTACK



Trick #02 – RESPONSIVE ANIMS

POSE 1

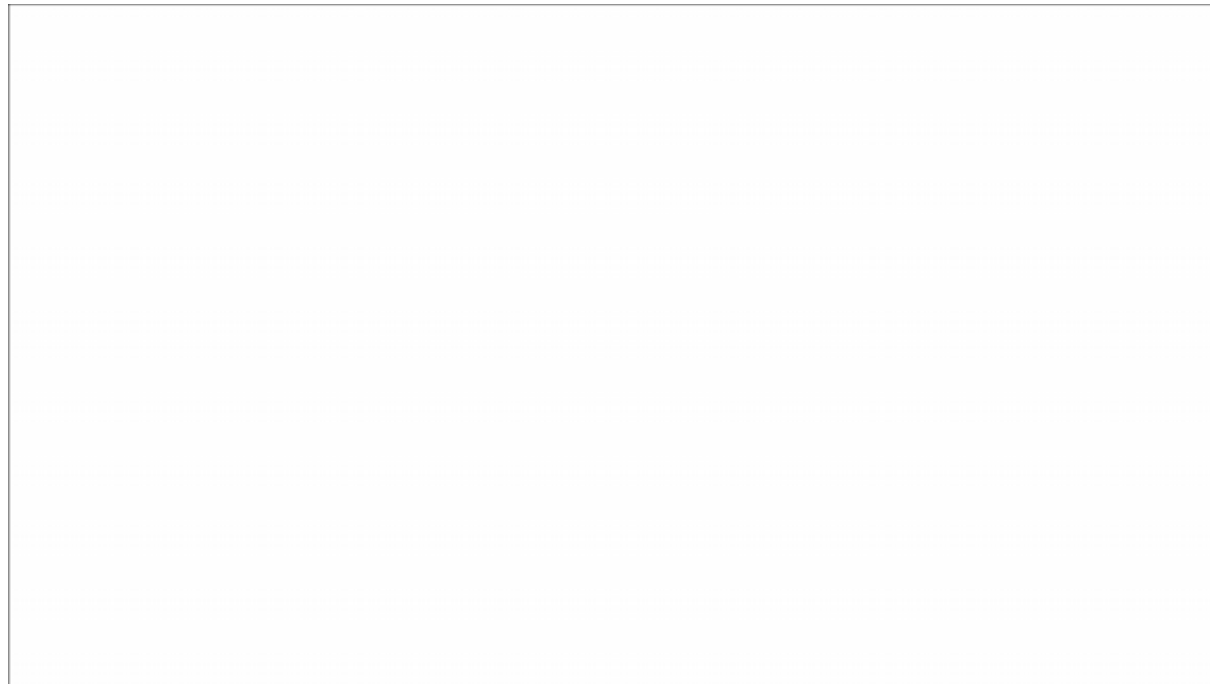
HIT

ANTIC

POSE 1



Trick #02 – RESPONSIVE ANIMS

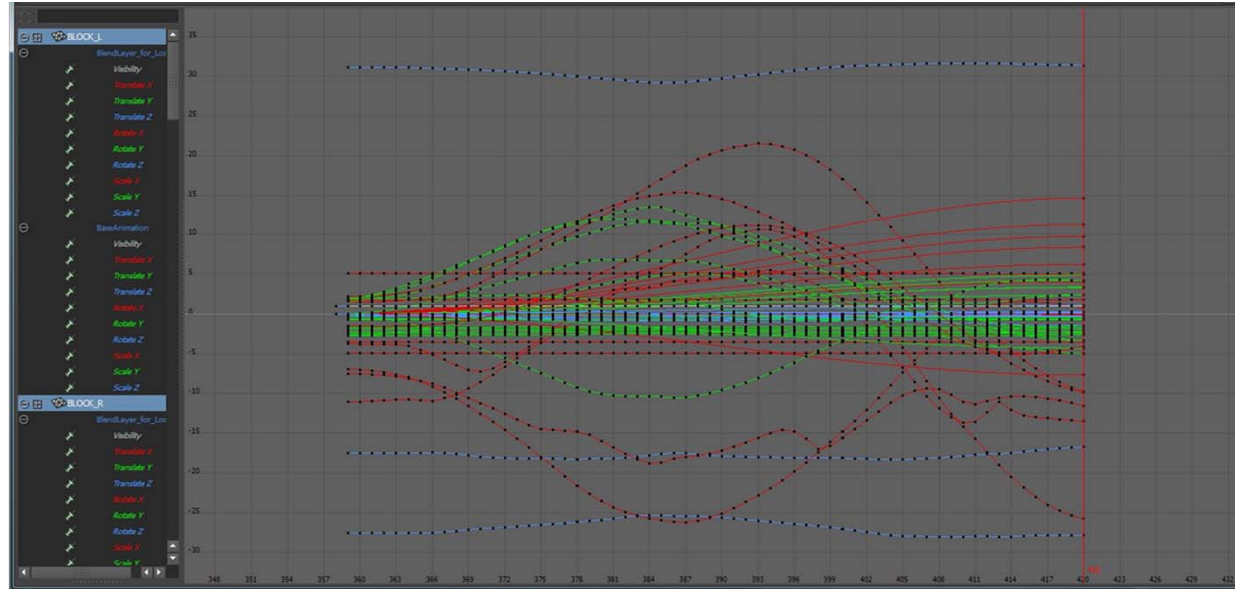


Trick #03 – LOOPING DENSE ANIMS

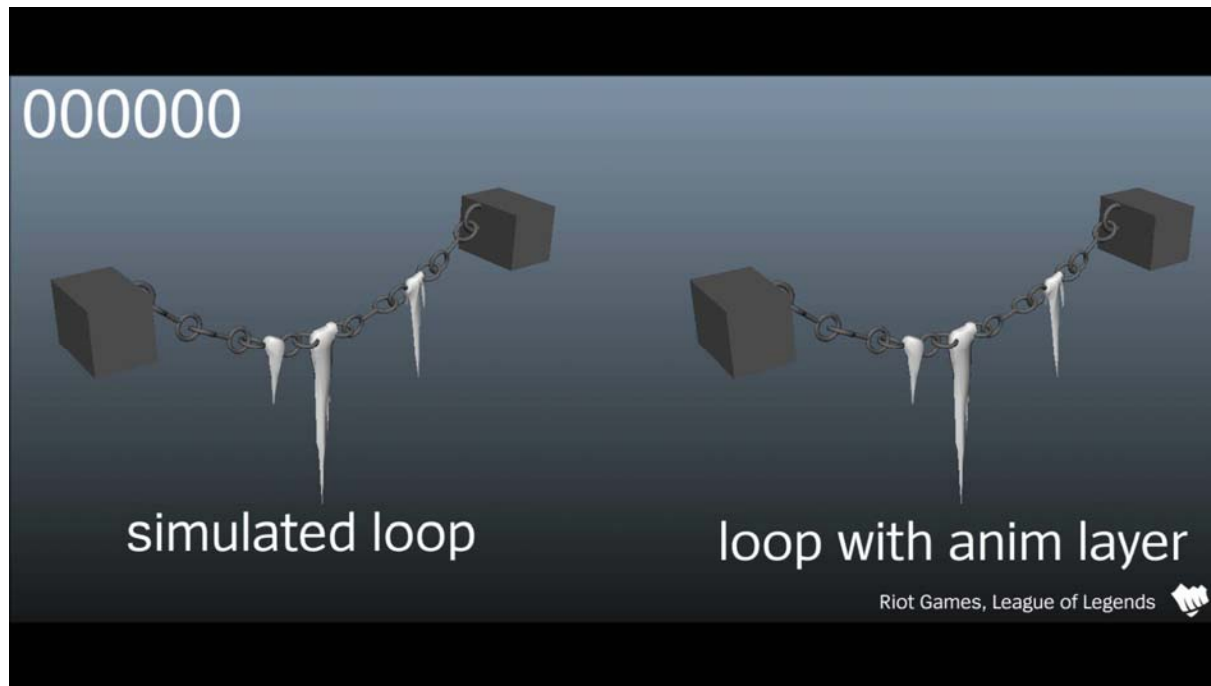
Simulated chains in our game



Trick #03 – LOOPING DENSE ANIMS



Trick #03 – LOOPING DENSE ANIMS





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SIMON UNGER



Tip #01 – Force > Weight

Direction of movement

Center of mass

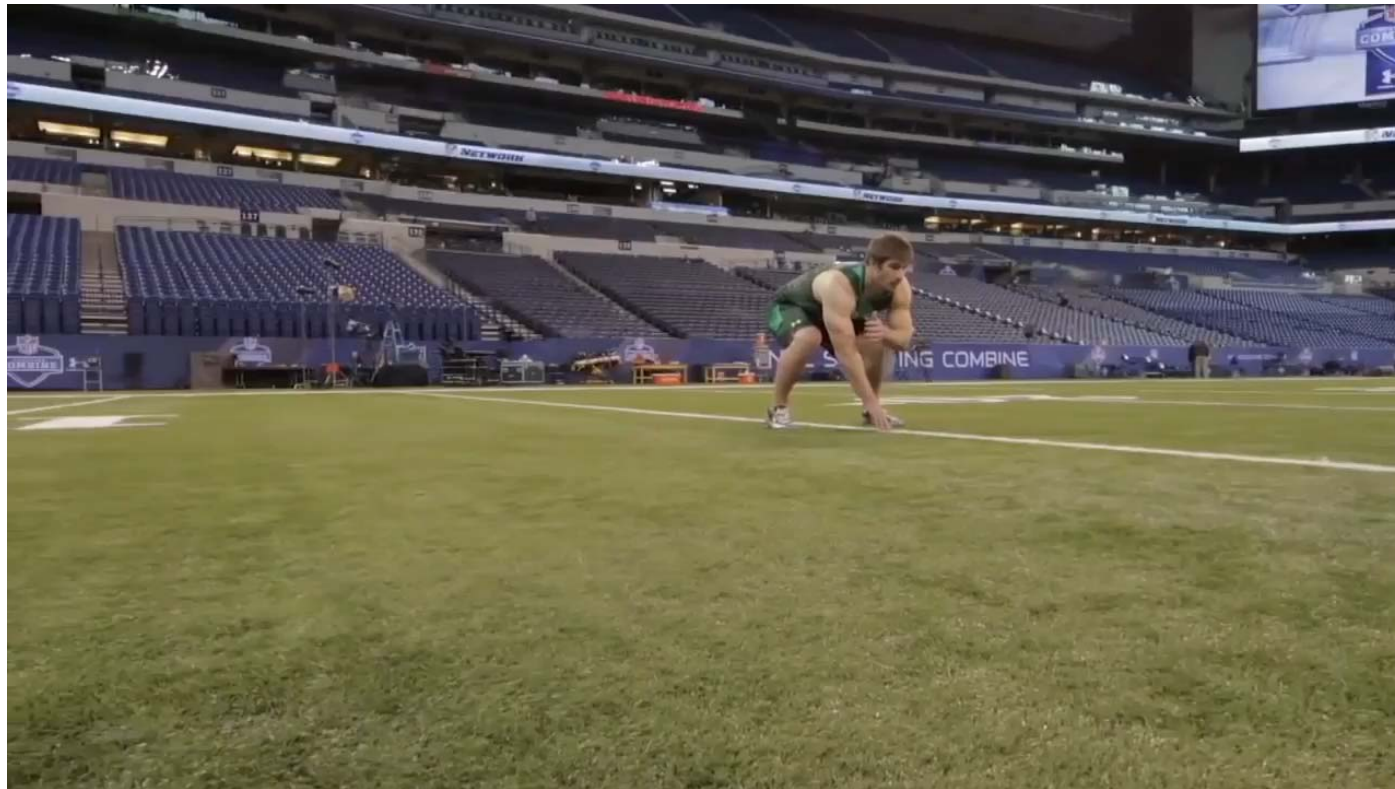
Direction of force on body

Contact point





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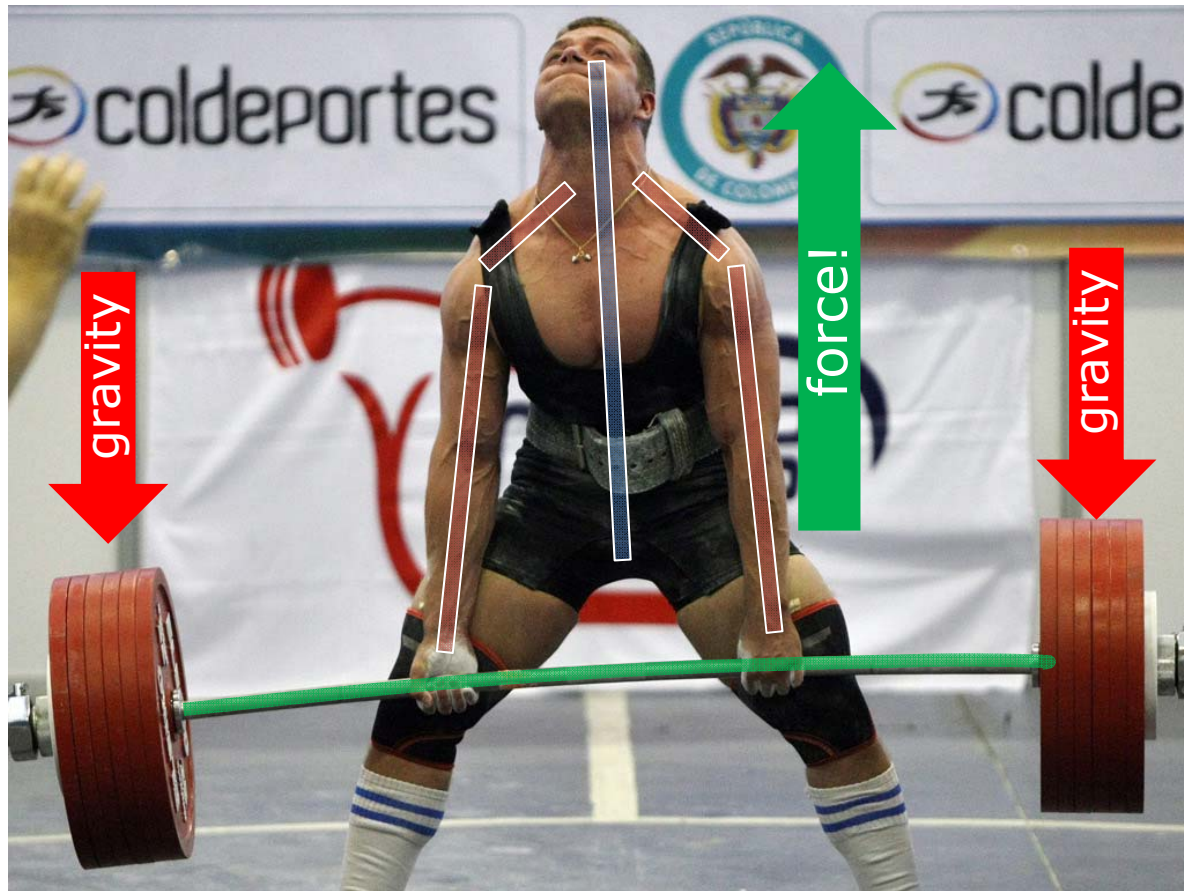
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Tip #02 – Use Metrics!!



NUMBERS!!

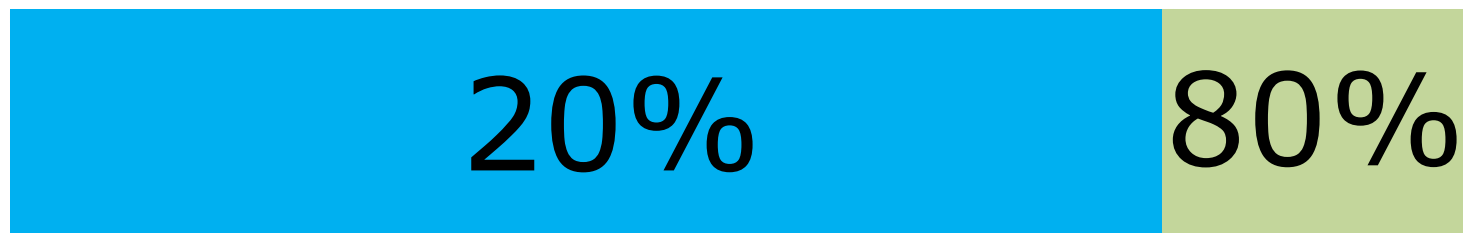
Tip #02 – Use Metrics!!



20%

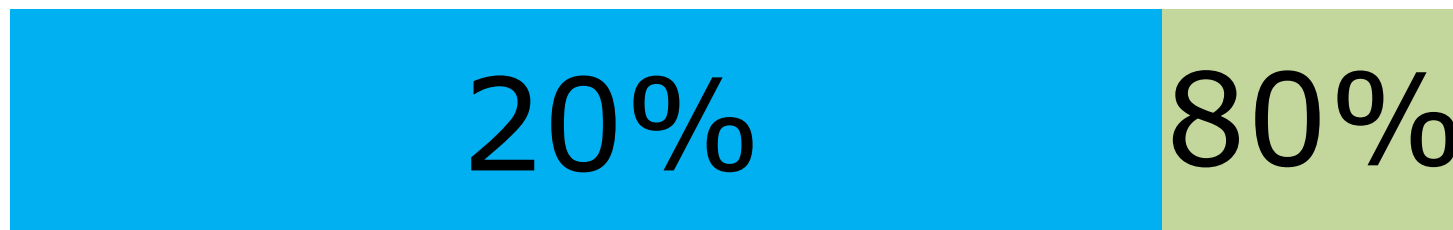
80%

Tip #02 – Use Metrics!!



These need to be
fully awesome

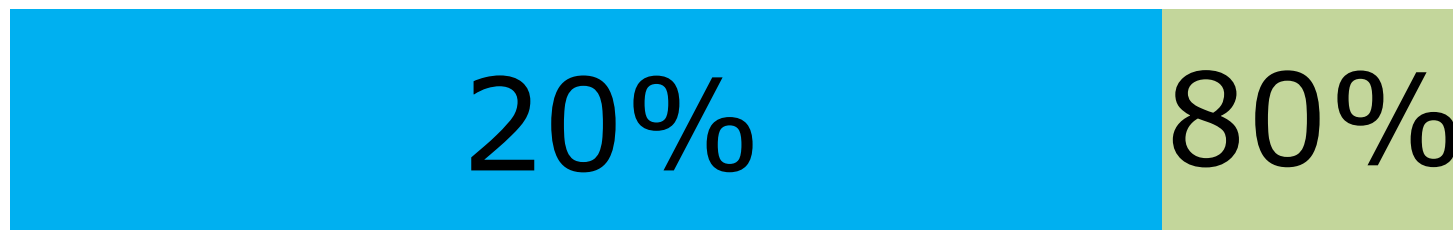
Tip #02 – Use Metrics!!



These need to be
fully awesome

These can just be
pretty awesome

Tip #02 – Use Metrics!!



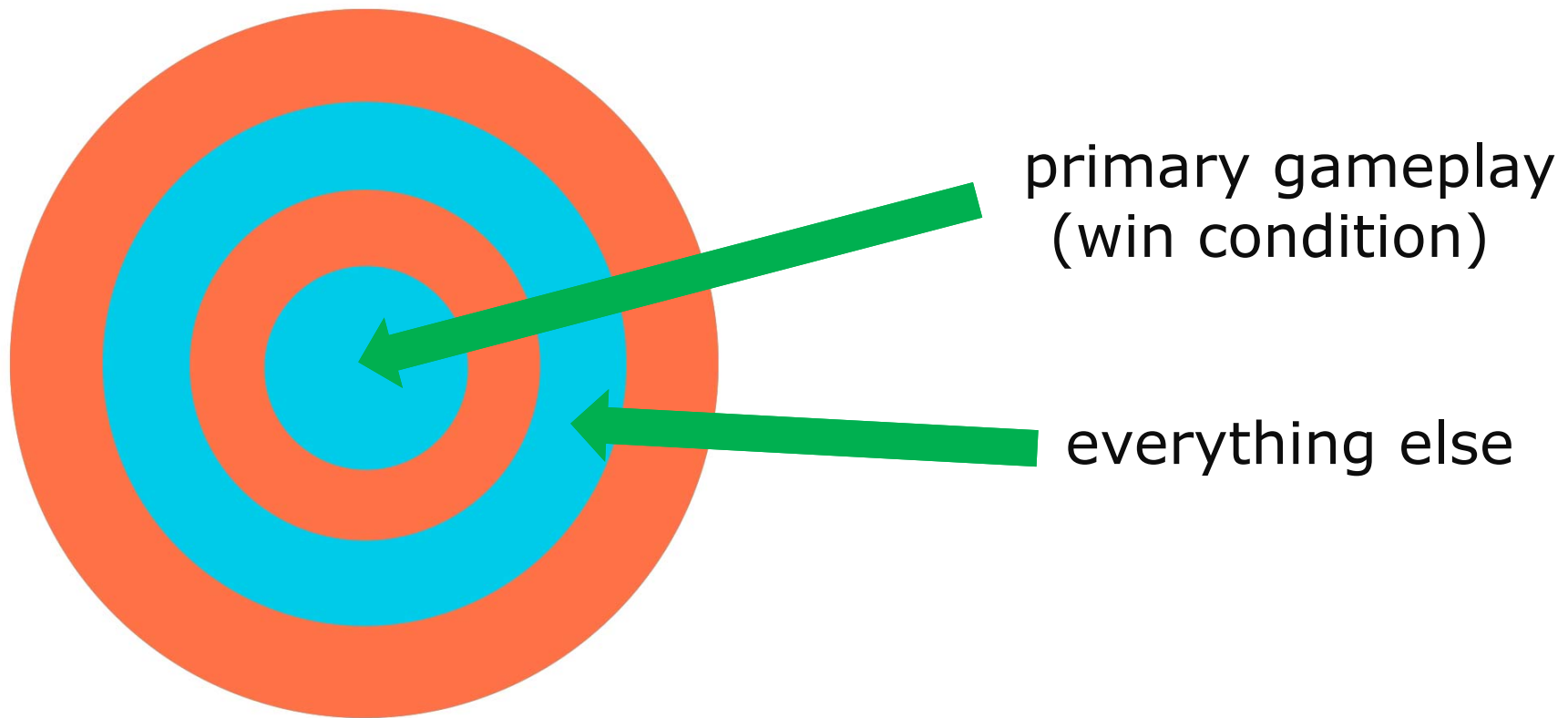
These can be
female

These can just be
retargeted

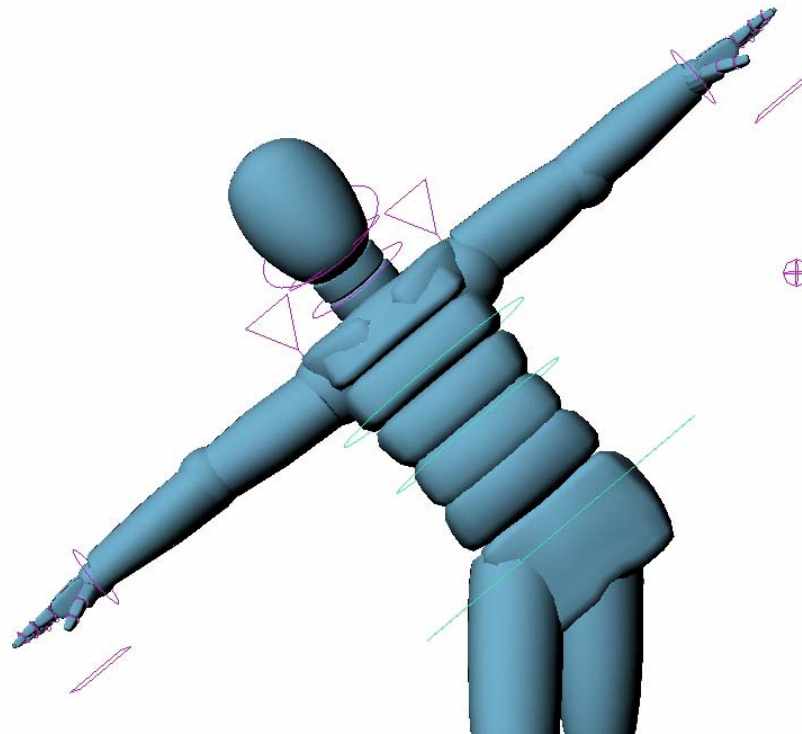
Tip #02 – Use Metrics!!



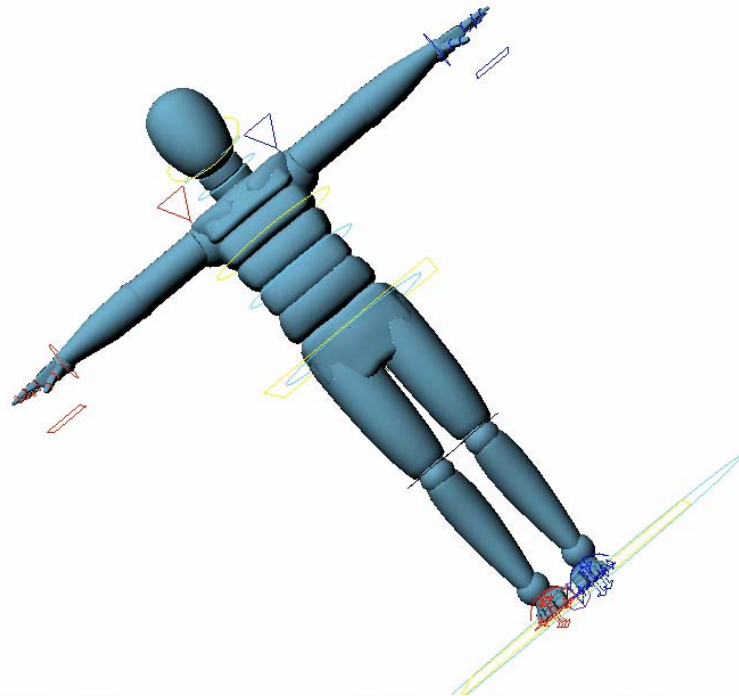
Tip #02 – Use Metrics!!



Tip #03 – Head Movement > Hip Movement!



Tip #03 – Head Movement > Hip Movement!



Tip #03 – Head Movement > Hip Movement!



Tip #03 – Head Movement > Hip Movement!



Tip #03 – Head Movement > Hip Movement!





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Amy Drobeck-Jones

Senior Animator- 5th Cell



ARTS
MAGNET
ALUMNI
ASSOCIATION



Walt Disney
FEATURE
ANIMATION



MONOLITH



VCA
Animal Hospitals



Break It

Smears and Multiples



Break It

Bones, cartilage and ligaments- They can do a lot more than you expect



Break It

Intuitive Exaggeration



Keeping Track of Arcs

Editable motion trails for checking cycles



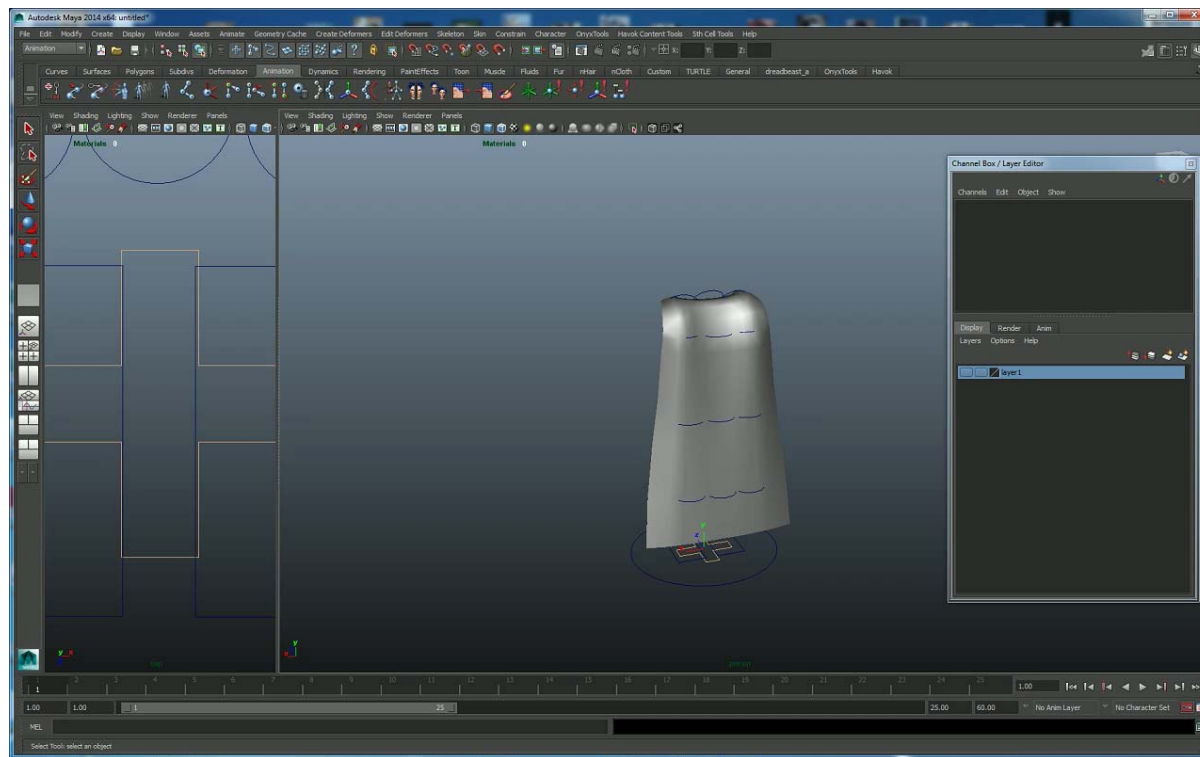
Keeping Track of Arcs

Editable motion trails for checking weapon arcs



Simple Block-in and Layer Example

4 Key frame sample with an animation layer to add finesse

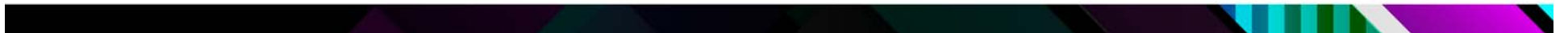




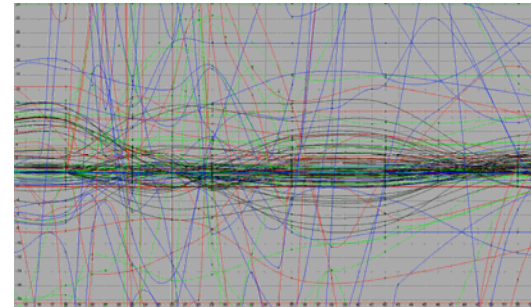
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That's all folks!

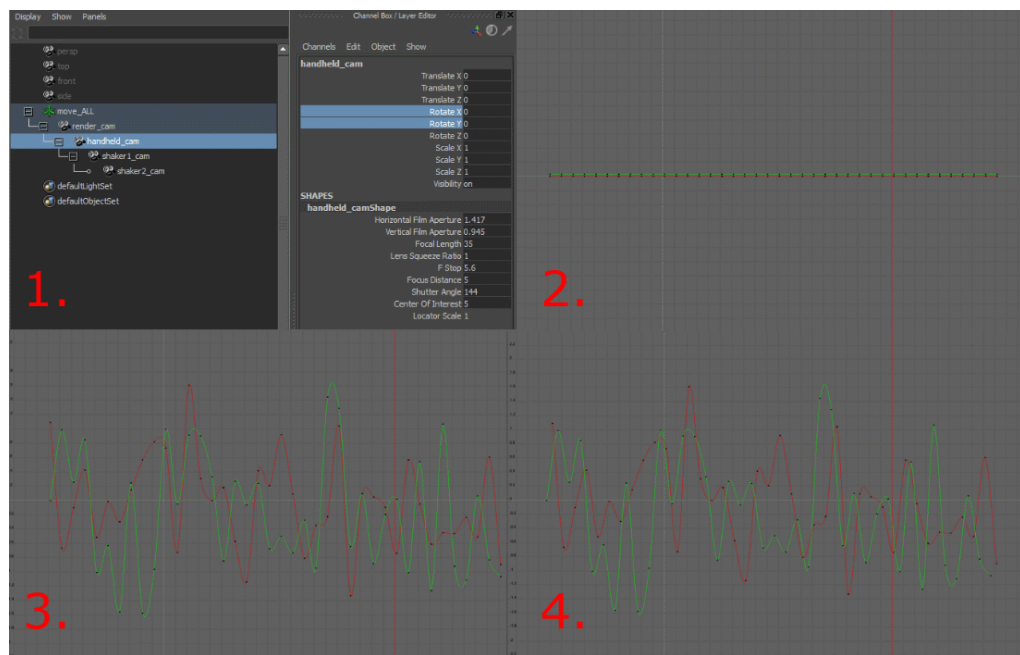
JEAN-DENIS HAAS



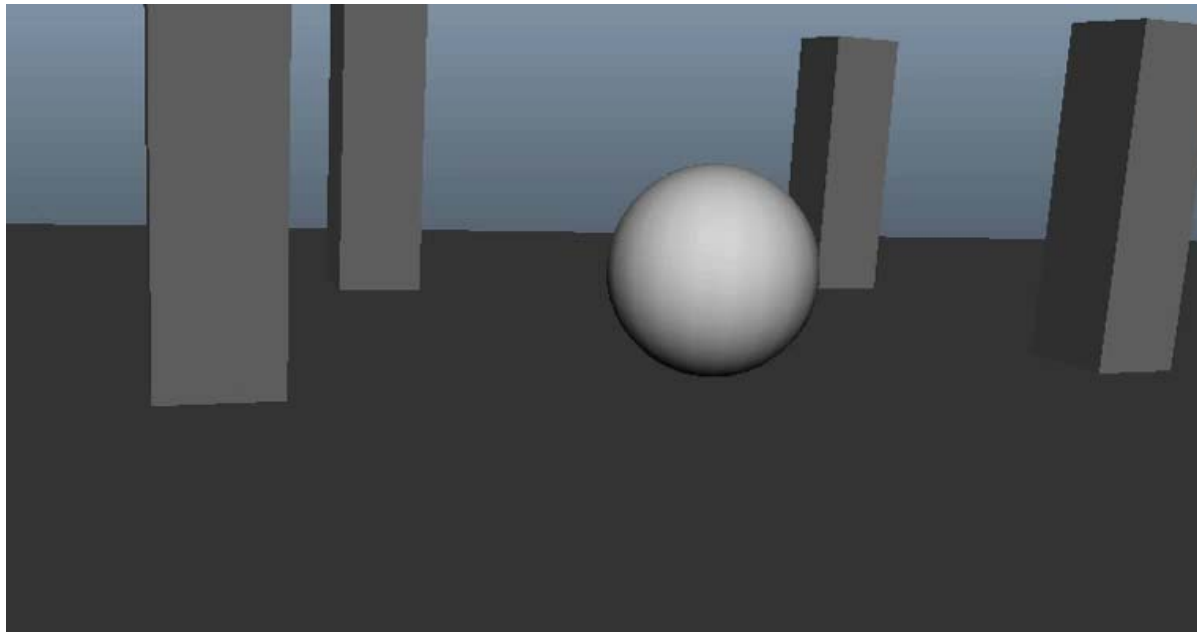
Trick #01 – HANDHELD CAMERA



Trick #01 – HANDHELD CAMERA



Trick #01 – Handheld Camera



Trick #02 – REDUCE BLUR



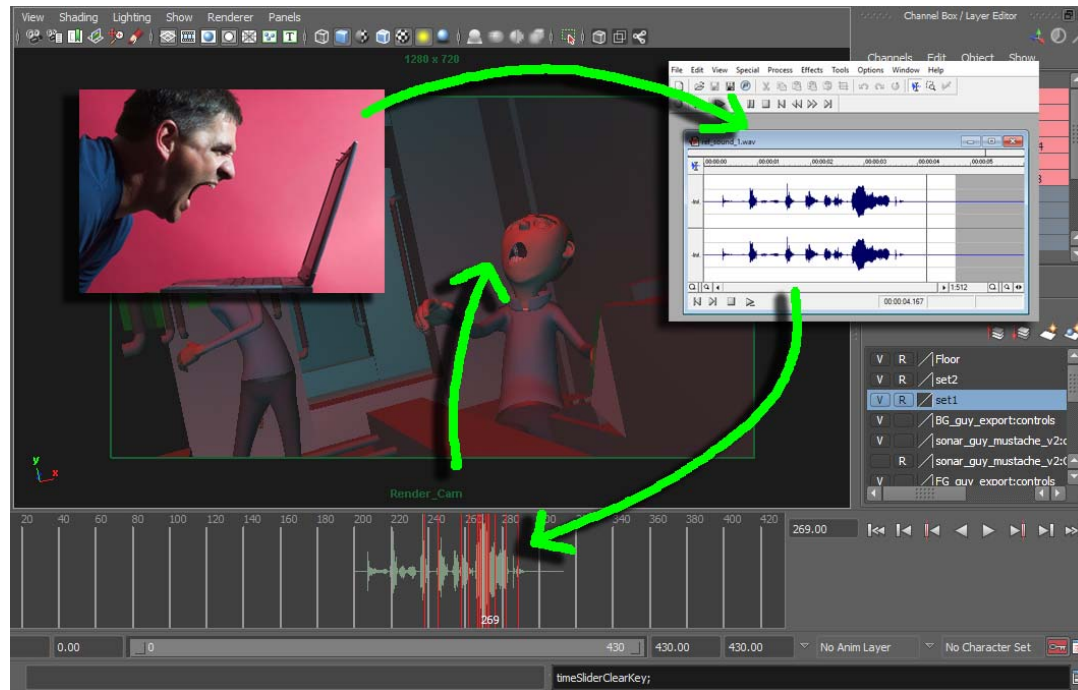
Trick #02 – REDUCE BLUR



Trick #03 – ACT/SOUND IT OUT



Trick #03 – ACT/SOUND IT OUT



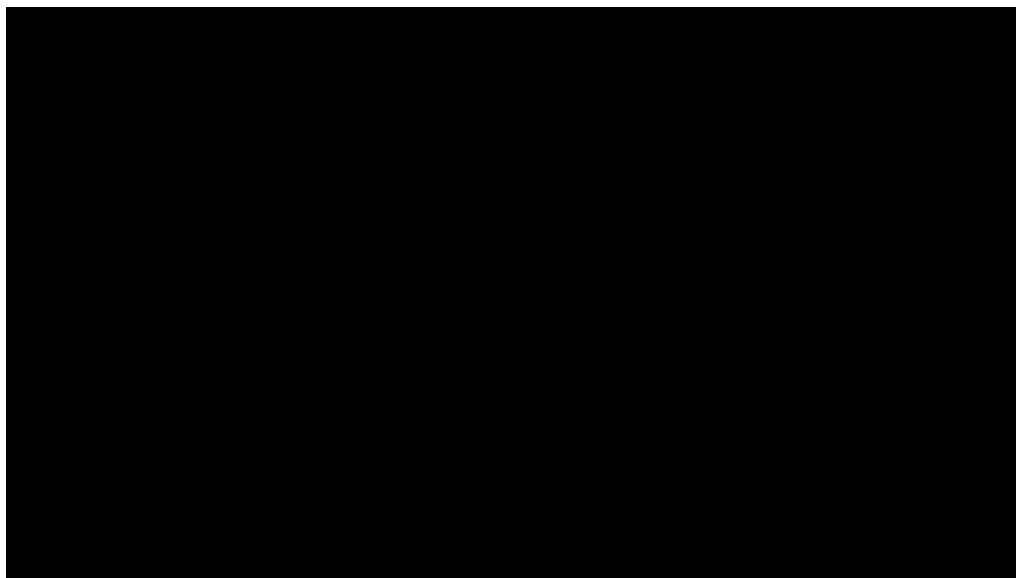
Trick #03 – ACT/SOUND IT OUT





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BILLY HARPER

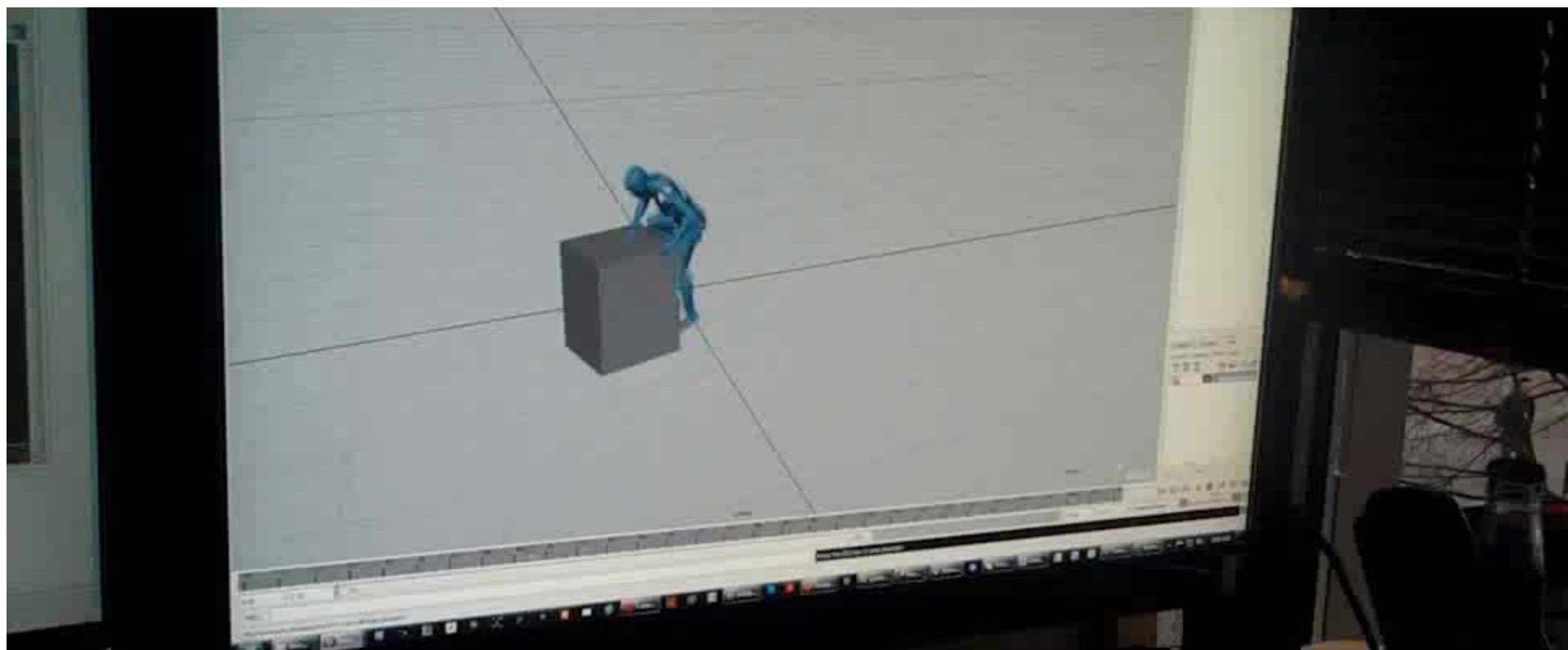


Trick #1 – SIMPLE RE-TARGETING

USE ONE ANIMATION LAYER AND YOUR OWN ANIMATOR'S SENSE OF POSING TO "RETARGET" MOCAP

- Pick an important frame where registration is critical
- Put all your controls on one animation layer
- Re-pose your character on that one frame.
- Sometimes it requires multiple frames, but I've been amazed at how many times it just requires one.





**Original Mocap on human scale
character.**

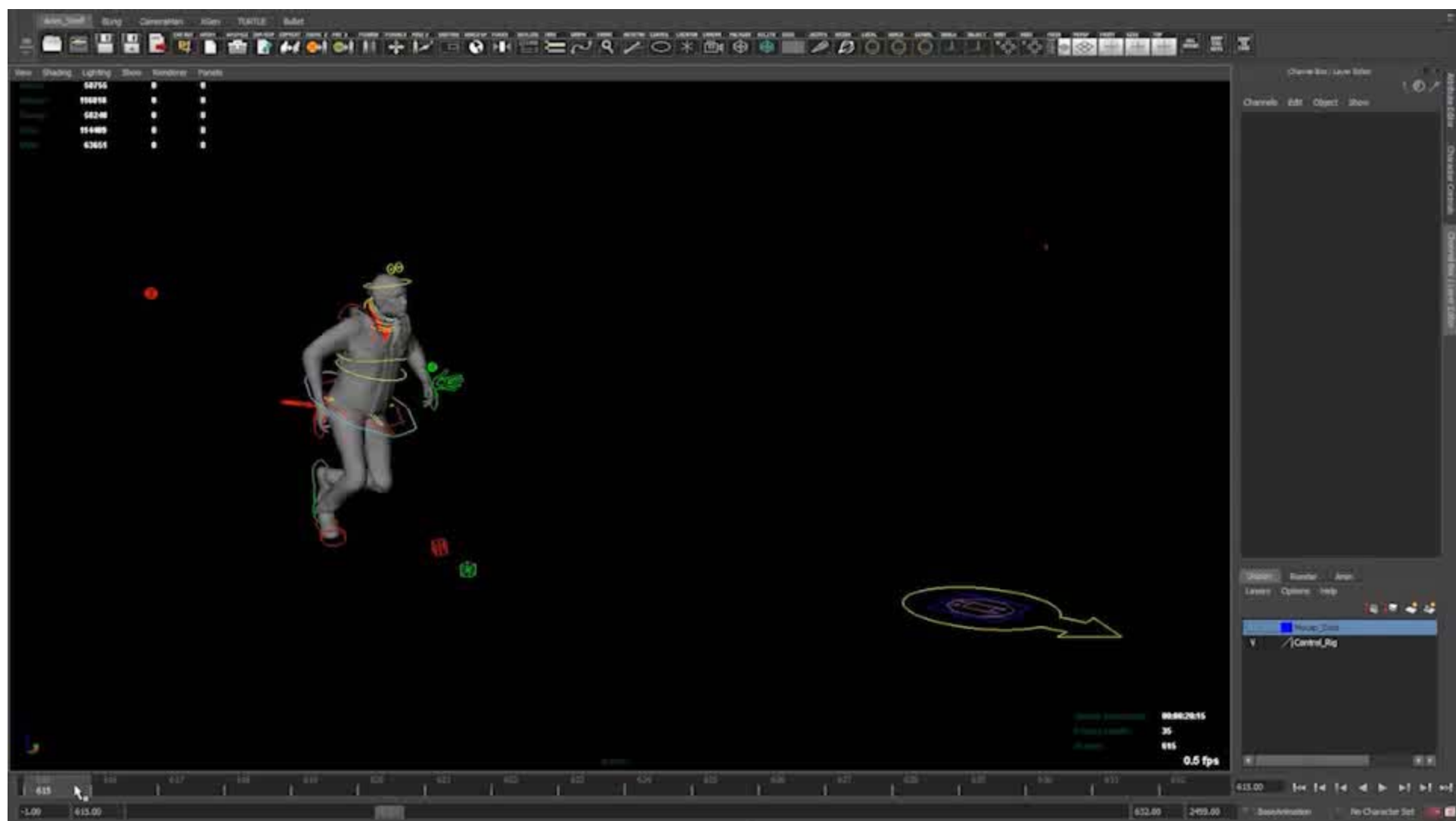


Trick #2 – Cleaning Up Data

MOTION PATHS+CONTROL RIG=GOODNESS

- Use for Cleaning up Ugly Mocap Data
- Good for Multi-Person Heavy Contact Data
- More Intuitive than Motion Trails
- Better for Visualizing Arcs
- Easy to Write Tools to Automate





Trick #3– Fresh Eyes

See Your Animation With Fresh Eyes

- Flip your play blast horizontally and also play your animations backwards to get a fresh/new perspective on your animation.
- Use the 7 key to view the silhouette of your pose. This is especially helpful for game animation where you can't predict HOW the viewer will see your poses.

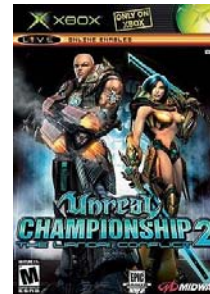
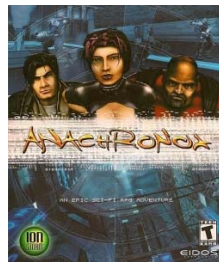
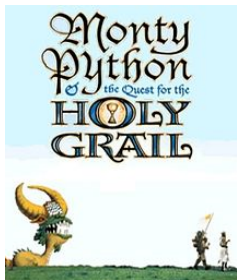


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JAY HOSFELT

 @HosFross

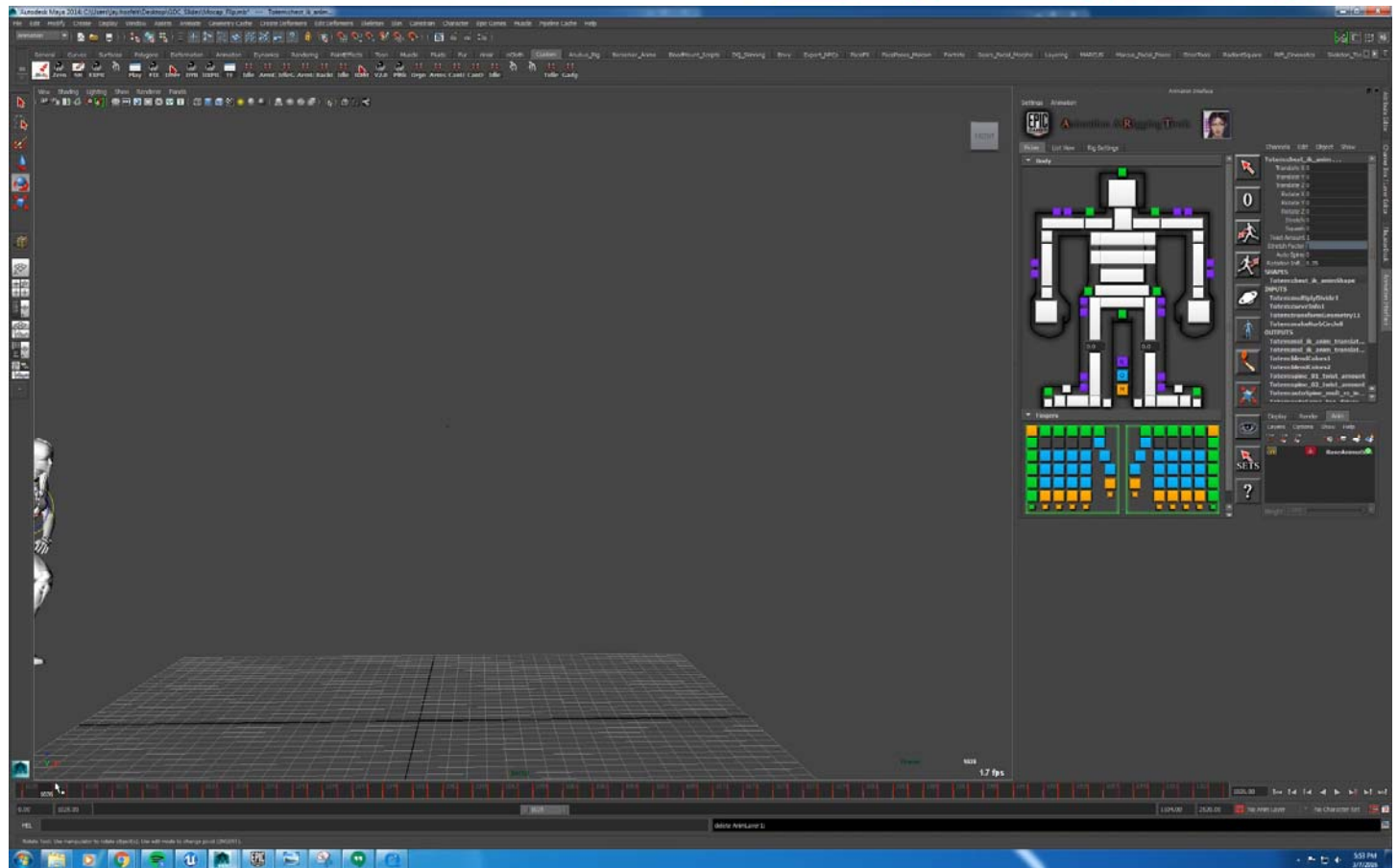


Trick #1 – Getting a manageable workflow for dense animation



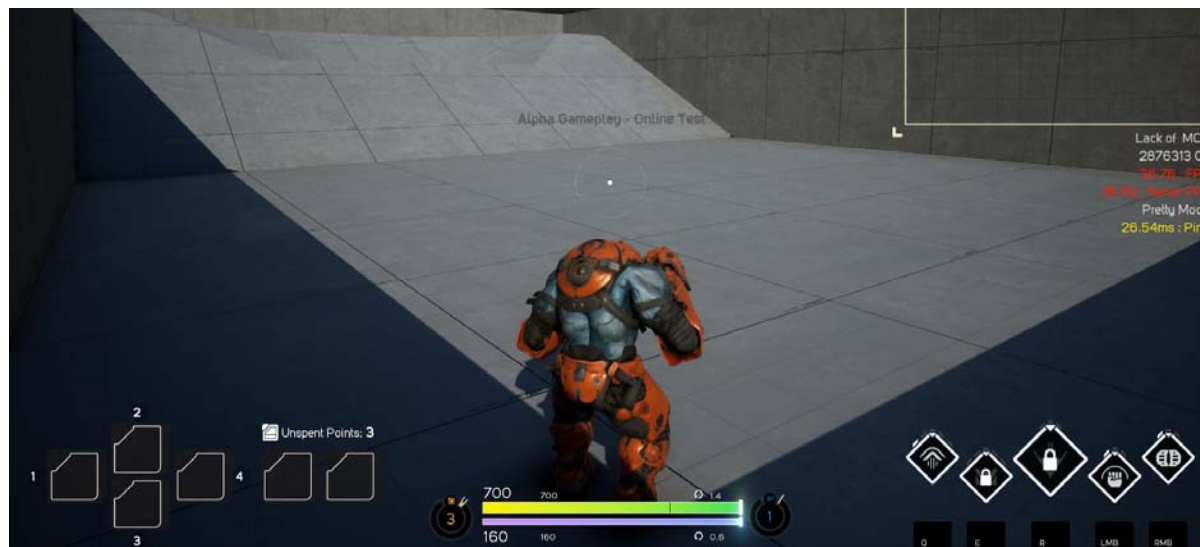
1. Select Controls
2. Create Anim Layer
3. Set to Override
4. Set Weight to 0
5. Set keys you want.
6. Set weight to 1
7. Review anim
8. Rinse repeat

Thanks Brad!!



Trick #2 – Upper-body animation

Problem: Designers like the fast input speed and freedom of upper body animations, but it looks ugly.



Trick #2 – Upper-body animation

Solution: Counter-rotate strafe animations so hips can swivel while still running the same direction.



Trick #2 – Upper-body animation

Solution: Combine the new lower hips with the upperbody



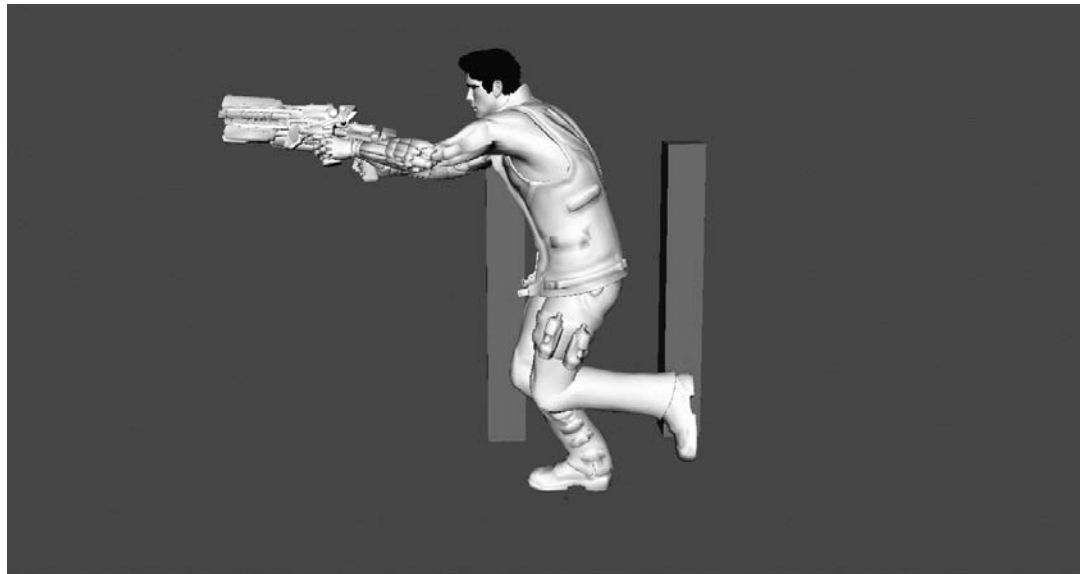
Trick #3- Back it out the right way

Many games need “in place” cycles.



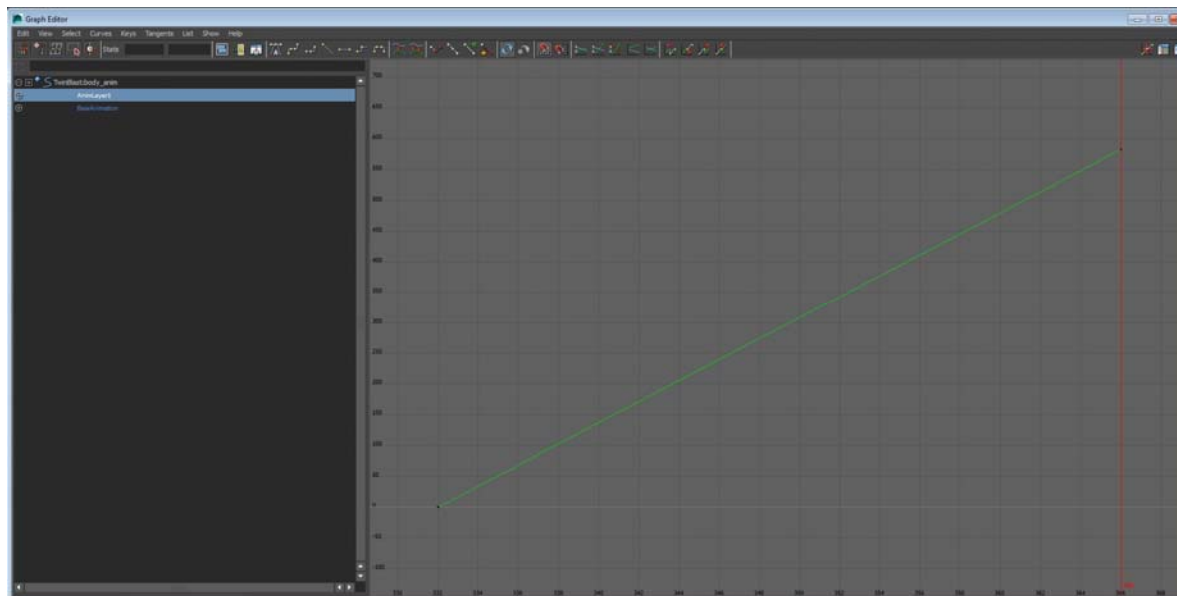
Trick #3- The wrong way

Many times animators delete the curve on the forward axis.



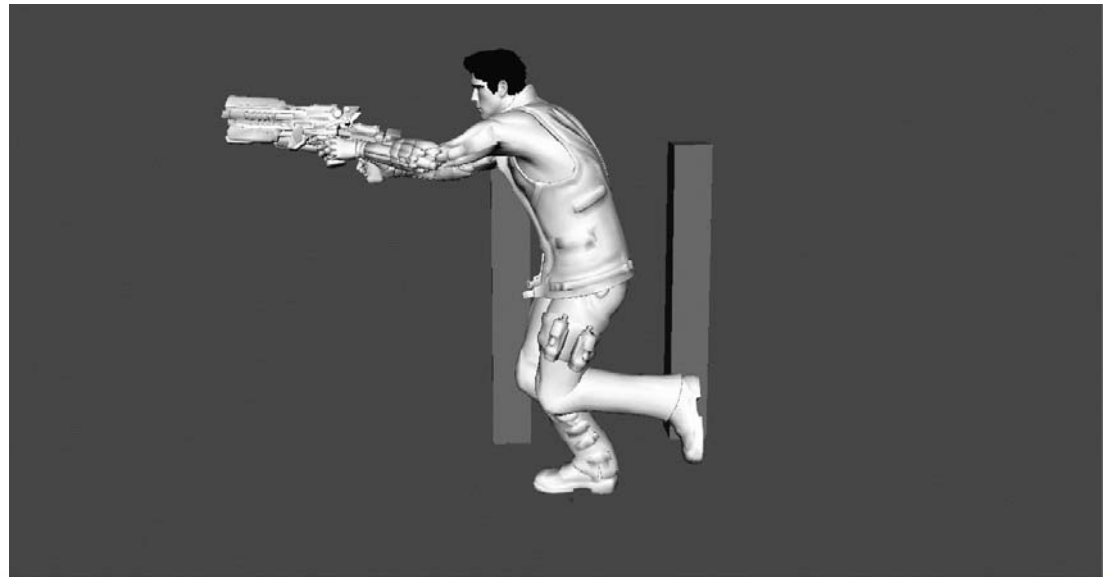
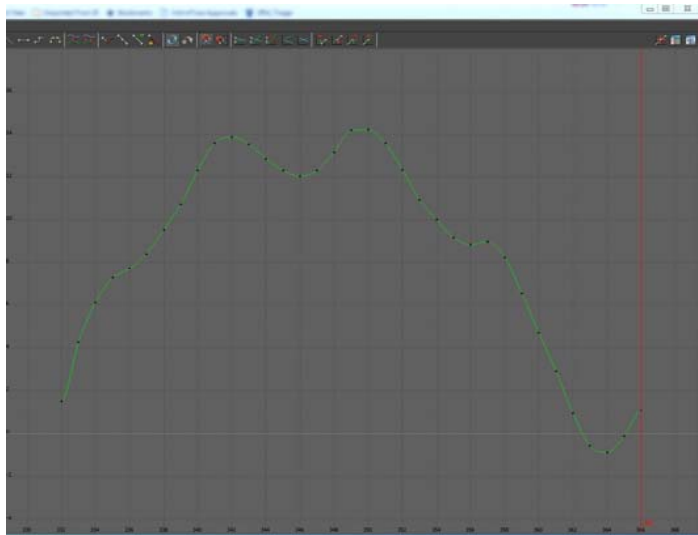
Trick #3- Back it out the right way

Subtract the trajectory your game engine will add.



Trick #3- Back it out the right way

What's left is the natural variance of forward and back motion.





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WANT MOAR? ***SPEEDROUND!!!!***



SPEEDTIP #01 – ALEX



Speedround Tip #02 – Use geometry in your scene for reference!





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SPEED TIP #03 – JD

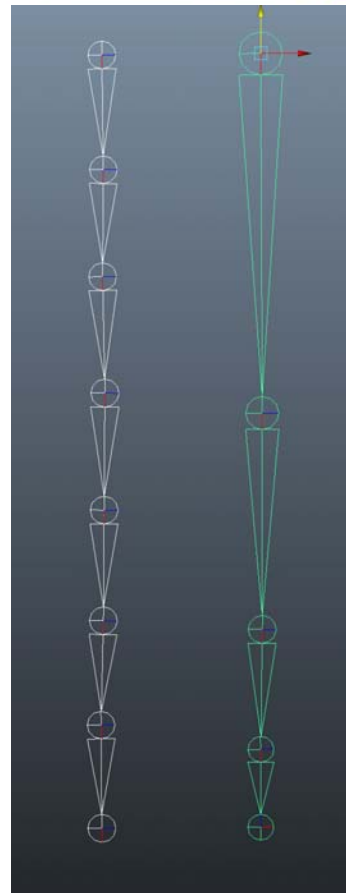


GDC ANIMATION
BOOTCAMP

#gdcanim

Speedtip #04

- When optimizing bone chains for dangly bits, cloth, etc. use golden ratio type placement rather than equidistant bone lengths.



SPEEDTIP #05 – ALEX

PUT IT IN THE GAME!



Speedround Tip #06 – Learn to code!

```

1 # example that samples a 3D marble texture at the location of a sphere
2
3 import maya.cmds as cmds
4 import maya.OpenMaya as om
5 import maya.OpenMayaRender as omr
6
7 # declare the procedure sampleColorAtPoint before running this script
8
9 pointArray = []
10 sampledColors=[]
11
12 pos1 = cmds.xform("pSphere1", query=True, ws=True, rp=True)
13 pointArray.append(pos1)
14
15 sampledColors = sampleColorAtPoint("marble1.outColor", pointArray)
16
17 print sampledColors
18
19 cmds.setAttr ("lamBERT1.color", sampledColors[0][0], sampledColors[0][1], sampledColors[0][2], type="double3")
20
21
22
23
24
25 def sampleColorAtPoint( shadingNode, points):
26     """
27     Returns an list arguments required to sample a 3D texture:
28     [shadingNode, textureName, uvw, xyz]
29     """
30     shadingNode = shadingNode
31
32     textureName = cmds.getAttr(shadingNode+".textureName")
33     uvw = cmds.getAttr(shadingNode+".uvw")
34     xyz = cmds.getAttr(shadingNode+".xyz")
35
36     return [shadingNode, textureName, uvw, xyz]
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SPEEDTIP #07 – JD

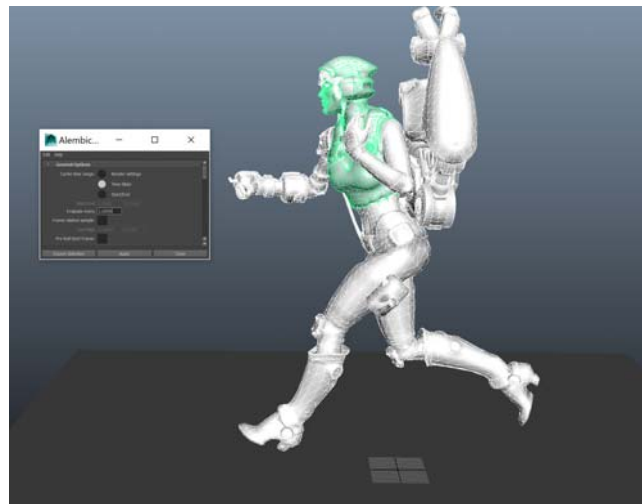


GDC ANIMATION
BOOTCAMP

#gdcanim

Speedtip #08

- Use things like Alembic/GPU cache to bring in reference animations. It beats referencing in expensive rigs.



SPEEDTIP #09 – ALEX



SPEEDTIP #10 – JD



SPEEDTIP #11 – ALEX



SPEEDTIP #12 – JD

