
TIPS & TRICKS
CREATURE AND ANIMAL ANIMATION
ANIMATION MENTOR®
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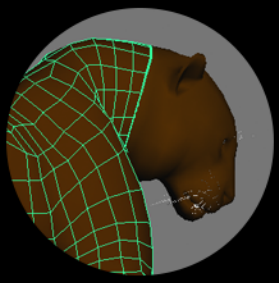
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# TOP 3

## REASONS YOU WANT CREATURE ANIMATION ON YOUR DEMO REEL



BY: SHAWN KELLY

*Not only is Shawn Kelly an Animation Mentor co-founder, he's also a 20+ year Industrial Light & Magic veteran where he works as a Lead Animator! His credits include **Avengers: Infinity War**, **Jurassic World**, **Pacific Rim**, **Rango**, and many more. At Animation Mentor, Shawn usually teaches Animation Basics and Creature Animation courses.*

Regardless of the studios you're applying to, you NEED creature animation on your demo reel! Here's why:

## You Want to Get a Job

Right off the bat, I want to make it clear that no animation job is easy to get. Learning the quirks of creature animation is not going to automatically guarantee you a job, but it sure will give you a much better chance at one!

Imagine you want to learn how to be a baker, but you're only interested in baking birthday cakes. You go through all of your training focusing solely on birthday cakes, not bothering to learn about cupcakes or pastries because you just aren't interested in that style of baking.

Sure, other people may be happy with baking a cupcake, but that nonsense isn't for you. **YOU are a Birthday Cake Baker.** That's your dream, and that's what you're focusing on.

There is nothing wrong with that as long as you know that you are severely limiting your job opportunities.

For reasons I just don't understand, many animation students are birthday cake bakers. They want to work in "features." They aren't mere animators, they are Feature Animators. Well, once again, there is nothing wrong with pursuing a dream, but they are cutting out a huge number of potential jobs by ignoring other styles of animation.

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**Studios are looking for variety**

If you add up all the studios doing visual effects, commercials, video games, and many TV animation studios – the number of studios hungry to see "animals & creatures" type of work on a reel is enormous.

It has to be at least half of the jobs out there! In fact, when you consider how eager games studios are to see realistic quadruped and creature work on a reel, I think it's safe to say that we are talking about far more than half of the animation jobs that exist.

It is never easy to get a job as an animator, but you should arm yourself with the most well-rounded education you can get when it comes to animation styles if you want to maximize your chances. Cutting out half or more of the potential studios out there just seems bananas to me!

## Variety on a Demo Reel is Never a Bad Thing

Creature animation is simply one more aspect of animation. It isn't some "hobbyist" specialty or secondary art-form, and learning it doesn't mean that you have decided that you are giving up your dream of working at Disney.

Look at my two compatriots as good examples. Bobby Beck and Carlos Baena lived a dream that many of you hold by working on some terrific films at Pixar. But how did they get there? Did they graduate and miraculously go straight to Pixar? Of course not, that's incredibly rare. They worked at a variety of studios on their way to Pixar, and both spent time in visual effects studios along the way. Bobby cut his teeth at Tippett Studio working on films like ***Virus*** and ***My Favorite Martian*** while Carlos worked at ILM on films like ***Men In Black II*** and ***Jurassic Park III***.

Their time spent learning and working in a visual-effects "animals & creatures" style did nothing other than round out their animation skills, build up their experience level, and better prepare them for their time at Pixar down the road.

In other words, learning about cupcakes is not going to prevent you from baking birthday cakes, and that cupcake knowledge may be just the stepping stone you need in order to get your foot in the door of a bakery and work your way up to becoming the birthday cake specialist you always dreamt of being.

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*Animation Mentor Alumnus, Yair Gutierrez, shows variety in his demo reel. Yair now works at Industrial Light & Magic and was nominated for an Annie Award for his work on Captain America: Civil War.*

## There is no Creature Animator. There is no Feature Animator. There is only Animator.

I realize that different studios are looking for slightly different demo reels from one another. Pixar may not leap at a demo reel that consists solely of hyper-realistic animation used in live-action movies. Weta may not be willing to take the gamble on a demo reel that features only stylized "cartoony" animation. But neither studio is going to discount a demo reel for featuring both styles, and in most cases, showing a variety of styles is going to be a big plus rather than a negative.

You see, the only difference between being a "visual effects animator" (which I would define as someone working on films like ***Transformers*** or ***Planet of the Apes***) and being a "feature film animator" (Pixar, Blue Sky, etc), is simply "style."

And "style" boils down mostly to exaggeration.

Are they making subtle exaggerations to create a scene that is exciting and larger than life while still feeling as real as the live actors in the film? Are they strongly pushing the poses, timing, and acting choices as far as they possibly can in order to maximize the clarity, entertainment value, and comic/cartoony feel? Or are they working in a style that falls somewhere in between? No matter the answer, the artist crafting

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those performances is simply an animator working in whatever style that project demands. They are all animators using the exact same principles of animation in slightly different ways and exaggerating different ideas, poses, and timing in different amounts.

Each style of animation is going to have it's own tricks and techniques and workflows, but the art is essentially the same. There is a lot to learn about any specific style, but most of the core process is identical. In fact, very often the artist themselves are identical, as many animators have worked on both live action "visual effects" films and feature animated films!

I completely reject the idea that any of us have to consider ourselves VFX Animators or Feature Animators or Games Animators or TV Animators or limit our education and aspirations to any other silly label.

**We are simply ANIMATORS.**

I am not a Creature Animator. I am an animator, an animator working in the style that my current job/project demands, and I am more than willing/excited to try other styles down the road when the opportunity arises.

It's just silly to pigeon-hole ourselves into any specific style while at the same time making a conscious decision to cut yourself out of half of the job market.

Don't limit yourself to being a "birthday cake baker." Embrace your art! Be a baker!

## We are simply ANIMATORS.

There is an amazing world out there of cupcakes and truffles and pies and cookies, and learning about those will only make you a better baker while opening up a lot more job opportunities!

And you never know, you might just find that you love baking cookies even more than birthday cakes!

Wow, I've never been so hungry after writing about animation! Check out our **Creatures Workshops** and get baking, I need to go get a snack! ❖

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# 10 INSIGHTS

## FROM A GAME OF THRONES & GUARDIANS OF THE GALAXY CREATURE ANIMATOR



BY: NICOLE HERR

*Nicole Herr is a Los Angeles-based character animator, long-standing friend of Animation Mentor, and an instructor for our Creature Animation Workshops! Her credits include **The Jungle Book**, **Iron Man 2**, and **Guardians of the Galaxy**.*

*Nicole graciously answered some of our burning questions about her animation career, animation workflow techniques and what it was like to be an animator working on **Game of Thrones** and Guardians of the Galaxy. Read, get inspired, and go animate!*

> Students have a habit of overcomplicating their shots. They forget to keep their shots simple.

## How long have you been a professional animator and what inspired you to be one?

**Nicole:** I've been a professional animator since I animated Jellyfish for the film Sphere in 1998. But I started really thinking about animation as a career when I was in high school and saw ***The Little Mermaid*** on the screen. That film made me realize that this would be a career that I could happily do.

When I got home that night, I wrote a letter to the Disney Florida Studios asking for advice. A few weeks later, I got a phone call from one of their senior animators. To say the least, I knew then and there, that animation was exactly what I wanted to do.

## What was your favorite shot that you've ever worked on? Why was it your favorite shot?

**Nicole:** There are so many, how do you choose which one is your favorite?

On ***Fantasia 2000***, I got to restore the original footage from the 1940 release. Frame by frame. It was an amazing experience.

On ***Sphere***, I got to see my own animation on the screen for the first time.

On ***Stuart Little 2***, I worked on my very first character animation for a feature film.

On ***Suckerpunch***, I got to animate the baby dragon & her demise. It was the first time I got to work hand in hand with the rigger to design a one off rig for my shot.

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In ***Guardians of the Galaxy***, I got to spend my time exploring the characters throughout the film as a post-viz animator. It was about really fleshing out Rocket and Groot, their personalities and overall actions.




But I would have to say my favorite shot was on ***Legend of the Guardians: The Owls of Ga'Hoole***. I had the shot of the parents celebrating their son's achievement at the end of the film. It was a simple shot, but it was about what they were feeling for each other and their pride in their son. It was all about subtext and emotion. A personal favorite shot.

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## Can you tell us a little bit about the difference between a character animator vs. a realistic animator? Are the workflows different?

**Nicole:** My workflow for character and creature animation is actually pretty similar. When blocking I bounce between stepped and splined mode, but that is more on a shot by shot basis rather than animation type. The major difference for me, is when I am working with reference and the level of fine detail that I work into the shots themselves. The more realistic the animation, the more those little details really matter.

On cartoony character animation I shoot more video reference of myself performing the action. Focusing on the beats that I need to hit for the performance to come across to the audience & work with my fellow animators performances. My poses are generally bigger and broader than what I do in realistic animation.

For realistic creature animation, I spend more time learning about the animals that I am using as reference. If I can spend time with the actual animal type being used as reference, I do. That may mean going to the zoo, watching animal planet, searching the internet. I try to understand as much as possible about the creature itself, including: motivation, movement, and any little quirks it may have. For the ***Game of Thrones*** dragon commercial I worked on we were using bats and chickens as reference, with a little pigeon added in for flight. I also spend time studying the plate that my creature is going to be integrated into, as my animation has to work within the in the plate itself. I use it as a guide for my animation as to what I can and can't do in my shot.

## What is your workflow when animating a creature shot?

**Nicole:** Reference. Tons of reference. I try to understand exactly what the creature can do. It's not as easy as just performing the action and animating it from my own performance. I have to know exactly what I want to do in the shot before I ever set a keyframe. Sometimes, you can't find the perfect reference for your shots, so there is more planning involved to know how to get the creatures to work. **You also do have to perform to FEEL what your body is doing and how, so there is a lot of getting up and performing for my shots while actively animating the shot.**

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## When you get a shot, how much time do you have to animate it?

**Nicole:** That always depends on the production and the shot itself. Some shows allow 40 hours to animate a 240 frame shot, other shows allow more time. For more complex animations, they generally will give more time. For Doc Manhattan in ***Watchmen*** we were targeting around 5-8 seconds of finished animation per week. But, as I said, everything depends on the show, the character, and the overall schedule.

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## We see that you animated a dragon for the *Game of Thrones* Time-Warner commercial. What was that experience like?

**Nicole:** The ***Game of Thrones*** dragon (Drogon) was a joy to animate! The rig used in the HBO television series was extremely well thought out, which made it extremely smooth for us when we were given the same rig to use in the commercial. With the commercial we got the opportunity to really get into the dragon's thought process, motivation, and character. We were also able to expand who the dragon is and his relationship to Daenerys.

As a result, the entire time we were on the commercial, we were worried that we were pushing him a little too far into having thought and personality. But the client was very supportive, and encouraged us to explore him a little more. It was also the first time you got to see any of the dragons flying, so it was a fun experience all around.

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## What references do you use when you animate a make-believe animal like a dragon?

**Nicole:** Mostly I look for the type of dragon I am animating. If it's a little one that's supposed to act like a hummingbird, I would mix that with some bat. For the really big heavy dragons I look for big birds of a similar body type. I like using Pelicans and Condors for those. Recently, I worked on a quadruped dragon that had the personality of a labrador retriever. So I spent time playing with my lab (Pirate), mixing his motions with bats for the mechanics of flight, and a little Macaw for good measure.

There's almost never just one creature in the mix, it's about studying the dragon itself. And then taking the best attributes from various animals to make the best creature you can.





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## As a mentor, what are the most common mistakes you see students make?

**Nicole:** It's simple. Plan your shot.

- Students have a habit of overcomplicating their shots. They forget to keep their shots simple.
- They also forget that even creatures are characters. ***So they don't know WHO they are animating.*** As a result, the characters don't have motivation for their actions.
- Not studying the video reference for how the specific animal's body mechanics work, and how their environment affects the motions they are studying.
- Not moving their own bodies to understand and FEEL how the animal would work.
- Lack of weight.
- Using the wrong animal(s) for the creature's body type.
- Not asking for critiques and help.

## What tips would you give them to help them resolve it?

**Nicole:**

- You need to really understand who you are animating and why they are doing the action.
- Make sure you really understand the mechanics of the action that you are looking at animating, so acting out your motions as you are animating is a must.
- Ask for extra sets of eyes on your shot. Make sure you don't take any notes or comments personally, they are meant to be constructive and helpful.
- Most importantly, remember that animation is a team sport. You need to make sure you are part of the team.

## And lastly, what "dream" shot would you have liked to animate and why?

**Nicole:** Is there a dream shot? Yes. It's the next one! ❖

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# 5 TIPS

## TO MAKE THE PERFECT CREATURE ANIMATION LOCOMOTION RECIPE




**BY: LEIGH RENS**

*Leigh Rens is a veteran freelance animator whose credits include **Pirates of the Caribbean: At World's End** and **Rise of the Planet of the Apes**. He teaches both character and creature/animal animation!*

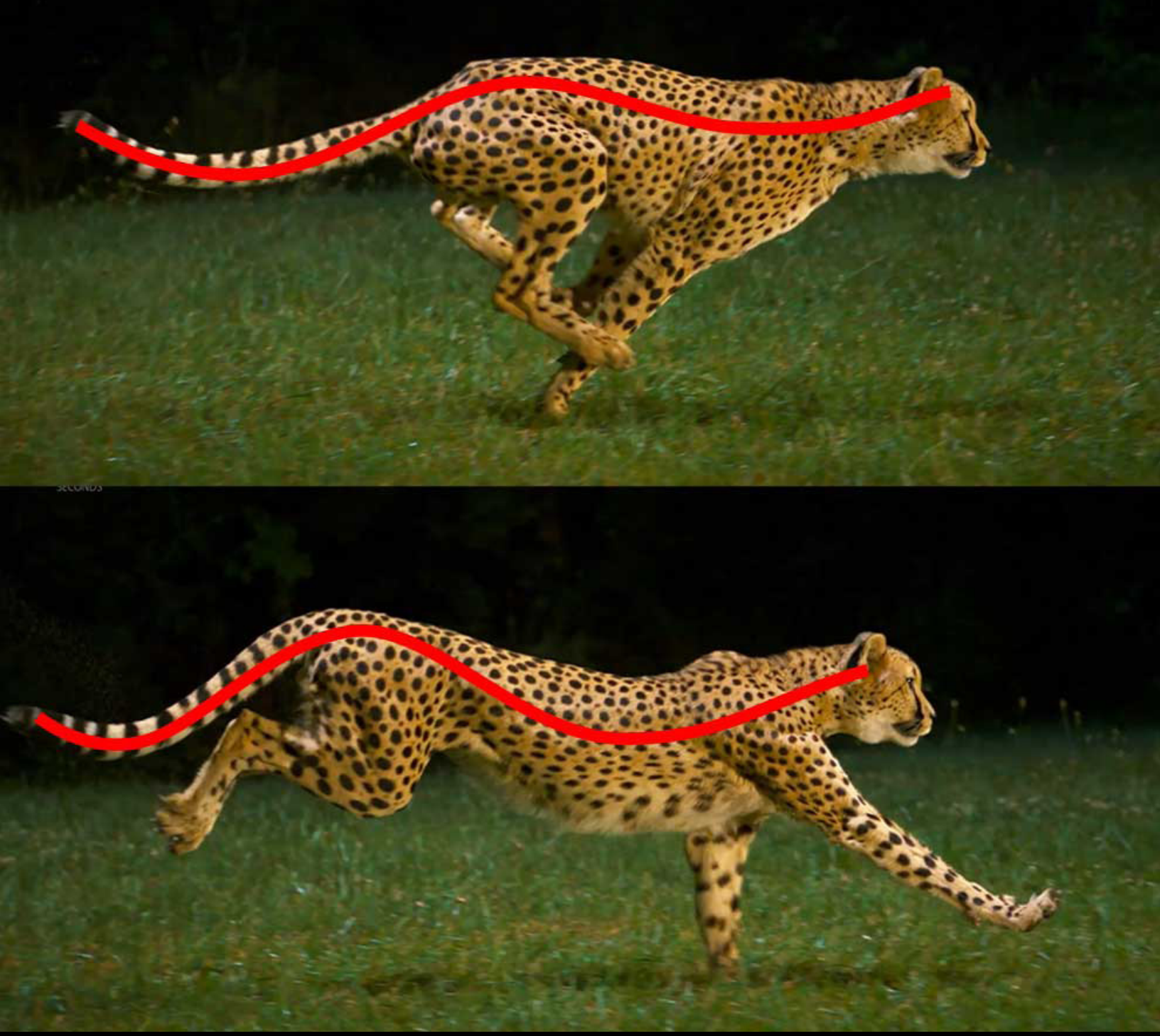


The first thing that comes to mind when animating creatures is Nature with a capital ***N*** – be it creatures, environment and/or the elements. It all goes together for me and humbles me to a point of having great respect. I don't know if it's because I grew up on an African farm for a bit, or because I studied nature to imitate it, or because like most everyone I've seen the power and scale of nature in the oceans, mountains and forests, and have come to admire the creatures that live, overcome and are part of it.

I would be amiss however if I make out like I'm this big nature guy. Like everyone most of my animal frame of reference comes from pets, the odd visit to a zoo or animal park. And herein lies my point – how are we to come up with something that is gonna grip the audience, if our audience has a similar level of experience when it comes to animals. On one hand this is great because animals are super popular, the pet industry is said to be bigger than the animation industry and we all know that puppies and kittens have attained star status on the internet. On the other hand we will need to expand our knowledge and understanding of creatures if we are animate them with conviction.

The following basic recipe seems common to many creature animation situations. Below I've included some of the why and how of this workflow.

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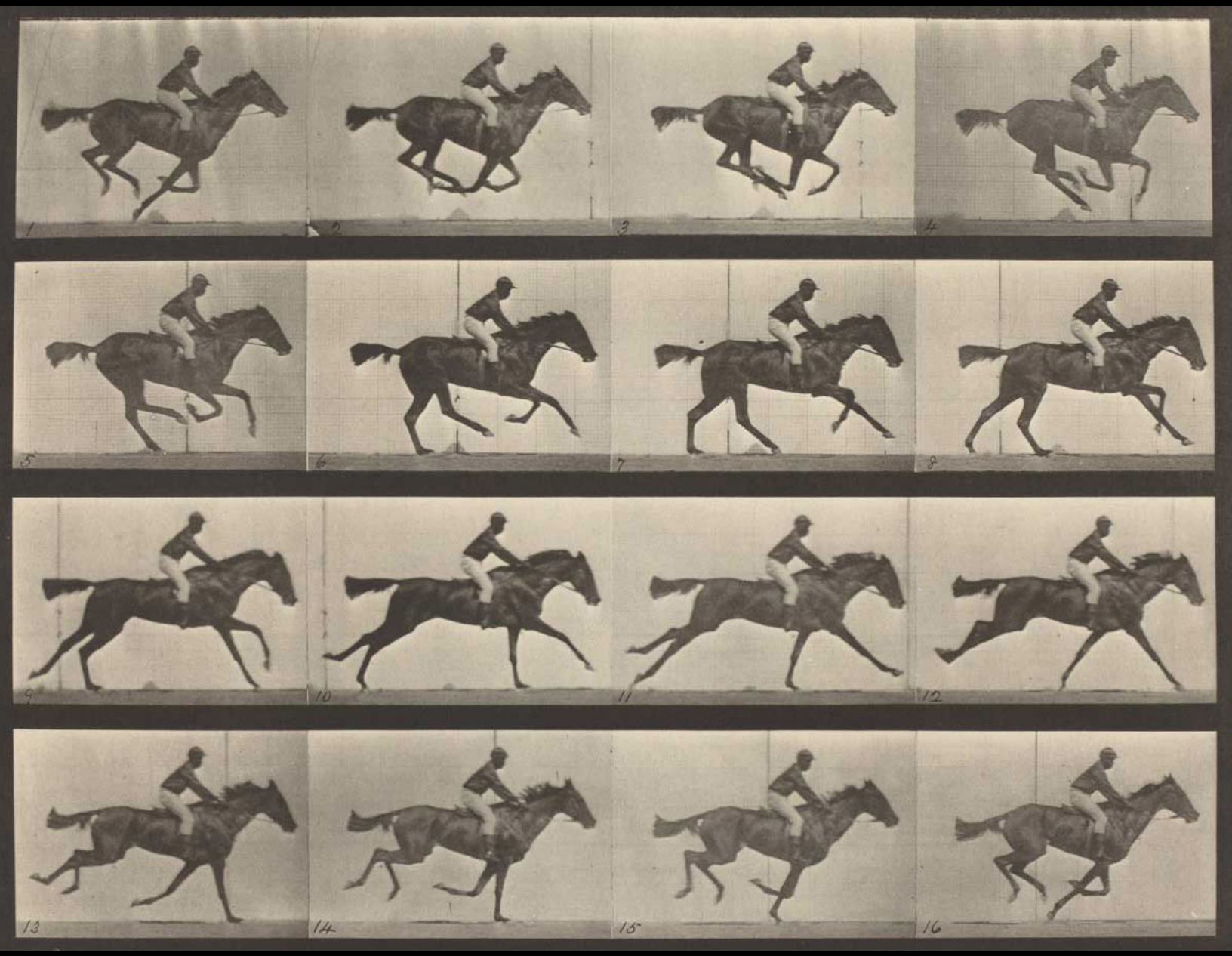


## Path of Action

Path of action, for creatures it's a sine wave, it's all over everything in nature. The line of action of the body will flow thru this path line and shape the pose. Think of the shape of the spine through the tail as being a different cut section of a sine wave for each pose as it moves along the path of action.

Scale

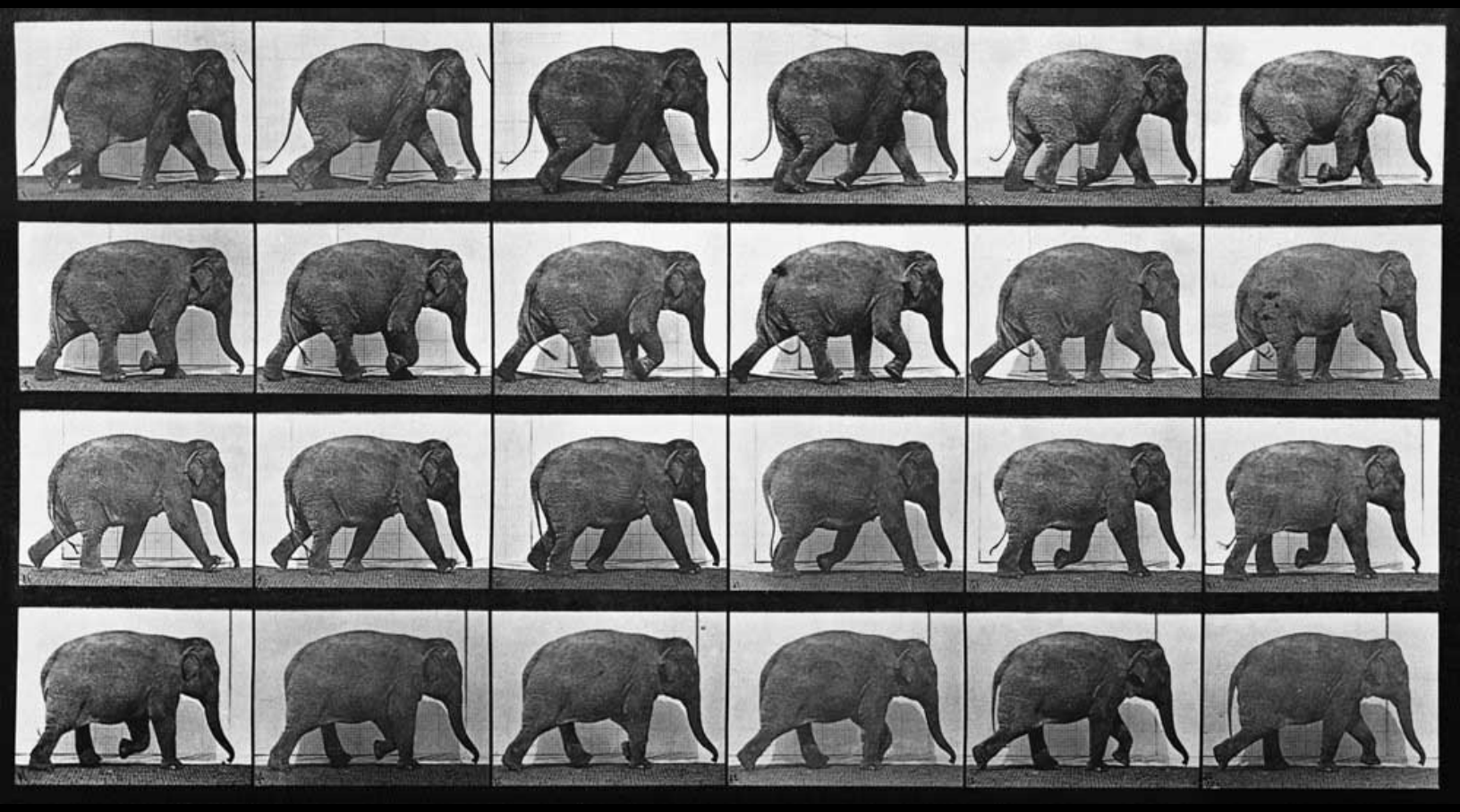
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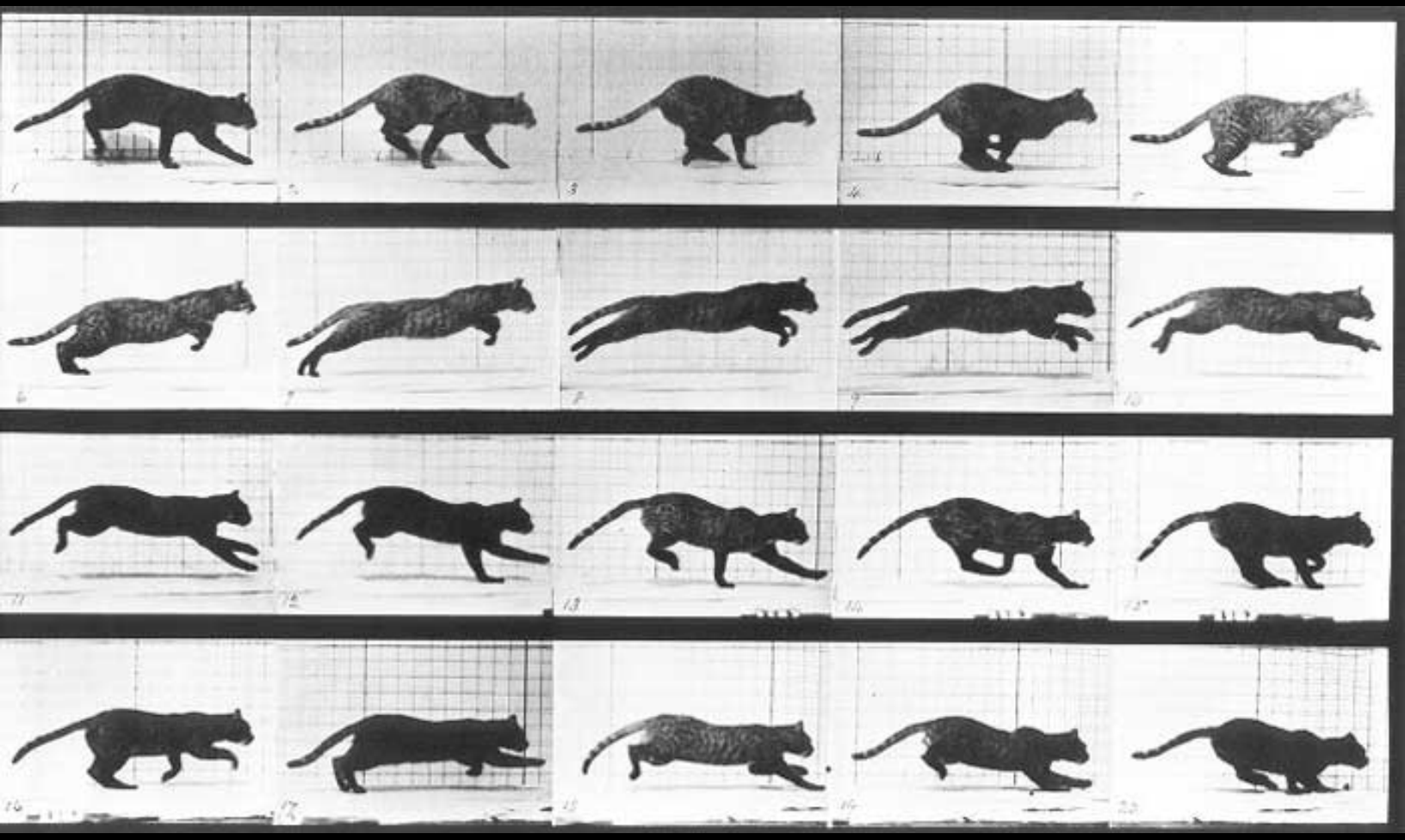


## Scale

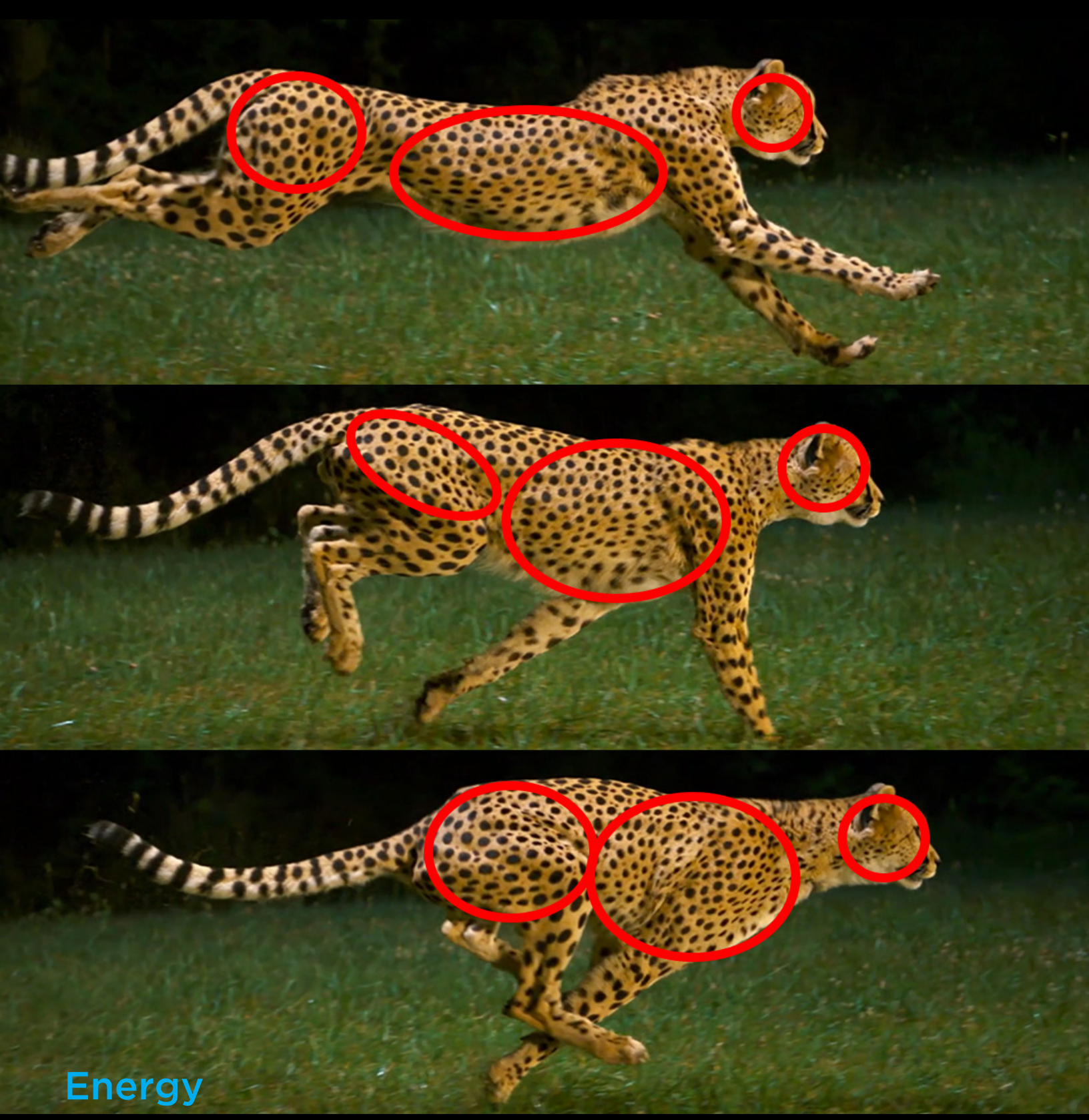
Next is scale, how large is the creature. This will determine the length and speed of its stride, etc.

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## Energy

Energy, here I use the visual of the bouncing ball. For creatures you use three main masses (balls), one each for the hips, chest and head. Varying the opposing action of these three main areas holds the magic of how an animal changes stride.

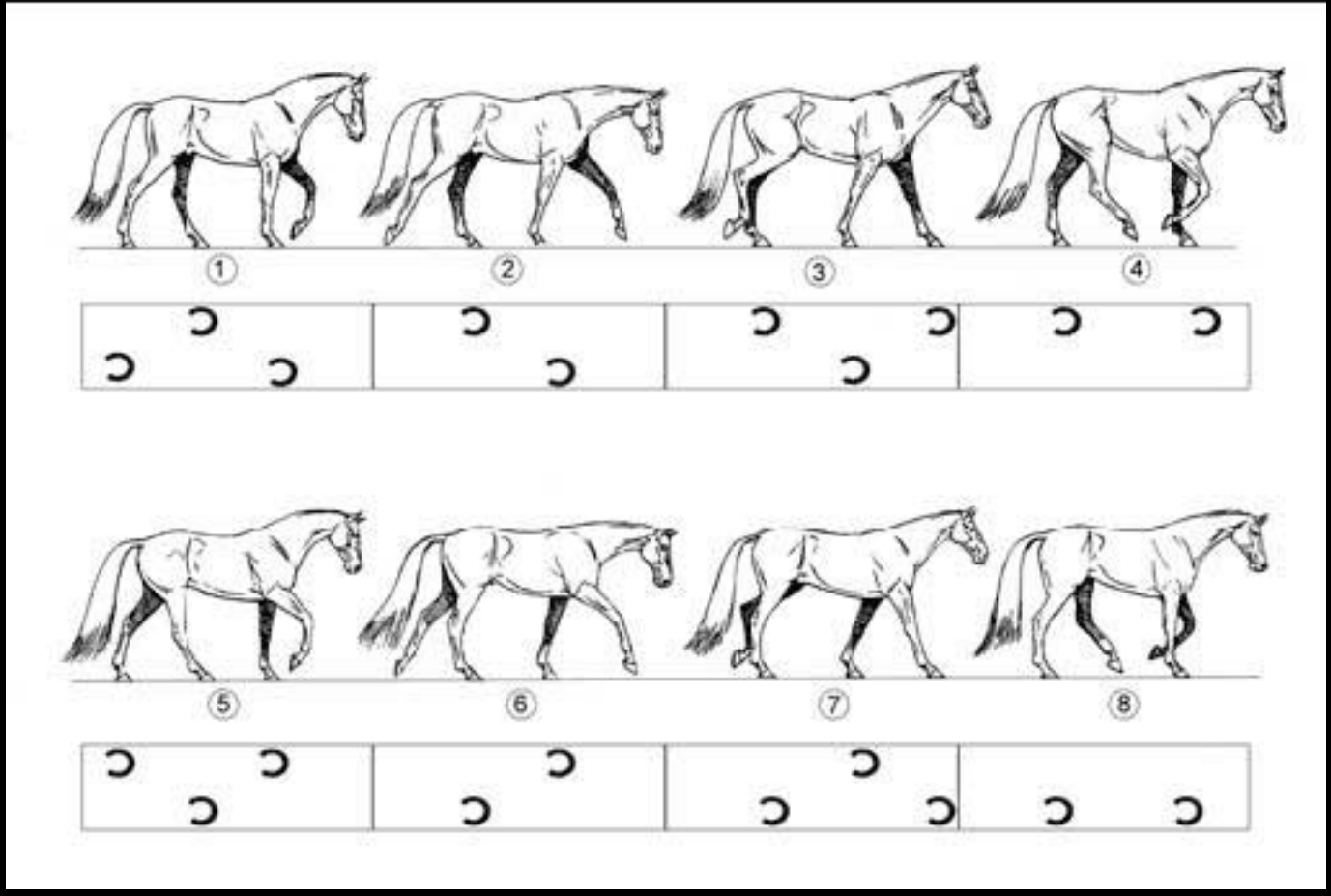
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## Foot Plants

Lay in the foot plants. Keep the fold of the legs simple, see them as structures. The top three joints maintain a ***Z*** and the ankle-foot does a reverse shape whip action as it shoves off after the leg has reached the end of its stride.

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## Tracking

Adjust the "tracking" or width of the feet placement.

That should cover it for the most part, armed with this basic recipe and a good piece of reference, you should be able to take on some animal locomotion!

However… if I add some deeper knowledge I can begin to flavor this locomotion into more of a performance. Take the sine wave I mentioned, if I begin to understand this as a path with timing and spacing – all of sudden I have amplitude of energy and frequency of the of the foot pattern… and here is my big idea behind this whole bit of writing. Nature is pattern, every creature has its own pattern of movement, a signature of sorts and this is based on way more factors than a simple four legged walk cycle. Missing this concept would be like saying the only bounce a ball can make is the average one (in an animation exercise), but what about all the other kinds of bounces a ball can achieve? Always remember that you want to avoid just animating an averaging of motion, and instead find areas to add flair and exaggeration, while also varying up your timing. This is the spice that really helps to bring your animation into the realm of performance, and gives your characters life.

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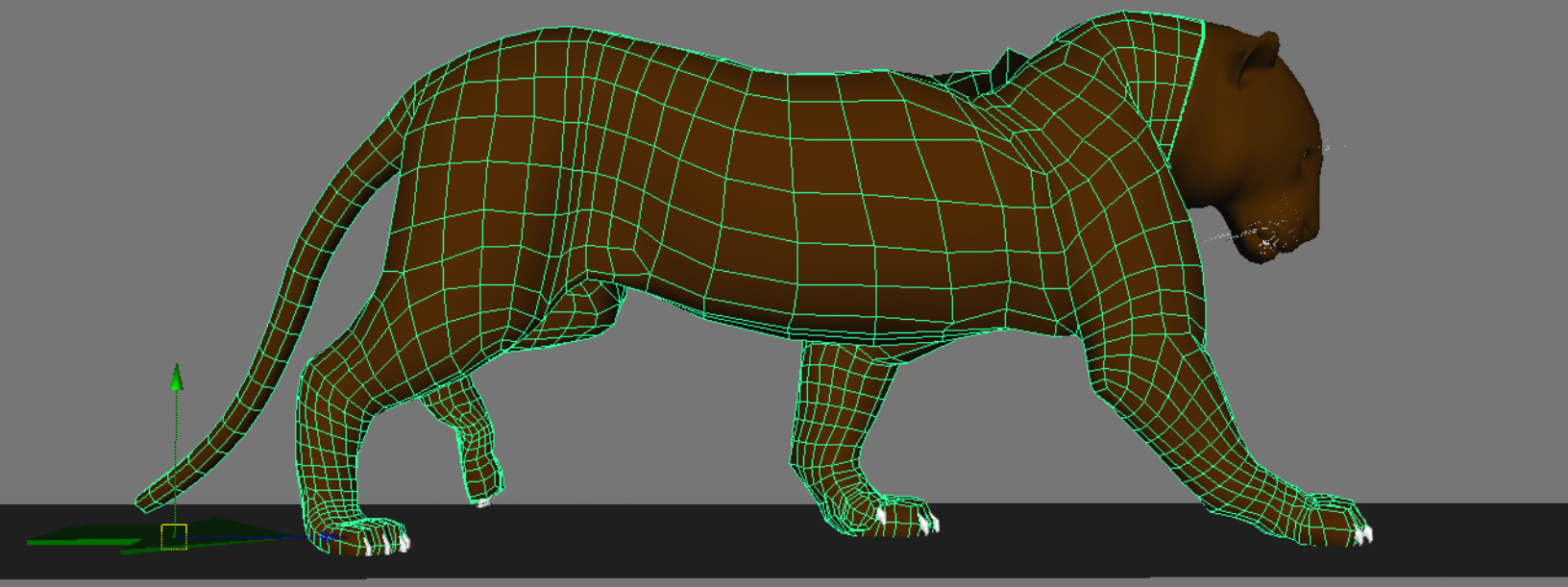




## Inspirational Creature Reference

Its with this thought I leave you with some pics and a **link to my favorite place** to go and regain my sense of wonder about all things creature! ❖

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# 3 STEPS

## ON HOW TO ANIMATE QUADRUPED WALK CYCLES WITH A JURASSIC WORLD ANIMATOR




BY: STEVE CADY

*Steve Cady is a mentor and lead animator at Hybride. His credits include **Jurassic World**, **Star Wars: The Force Awakens**, and **Avatar**.*

Having worked on several films that require realistic creature animation, such as ***Narnia***, ***Avatar***, ***The Waterhorse***, I believe it is essential to not underestimate the importance of PREPARATION!

## Preparation

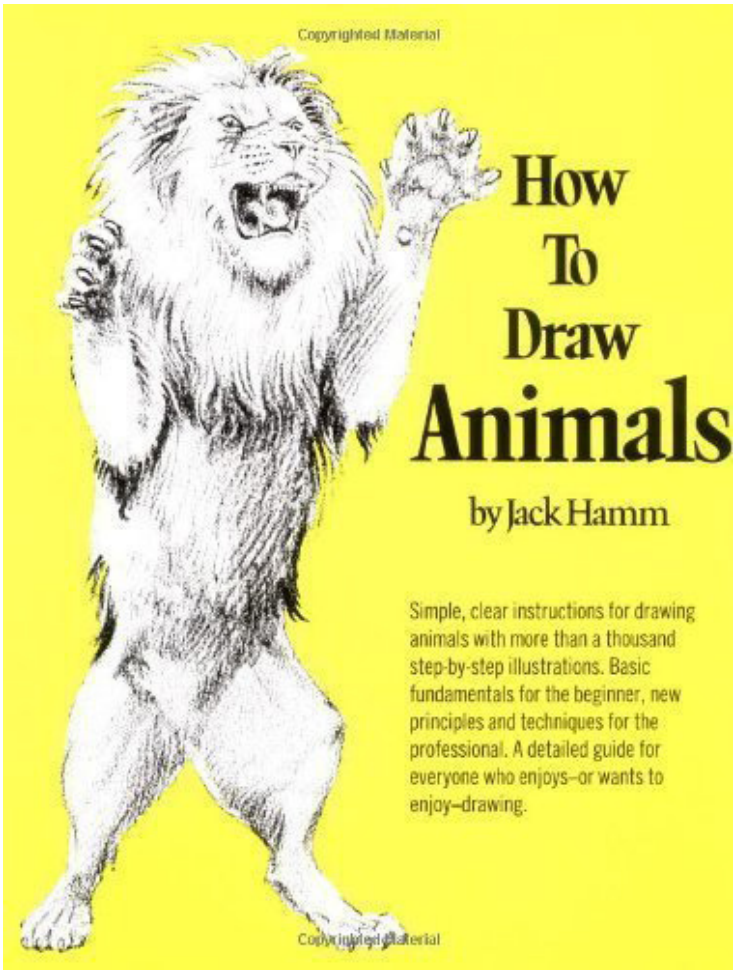
My first step: I take the time to study the basic anatomy of the animal in question; paying attention to how its body parts are connected to help me understand how to move the body in an accurate way. I use references. I would shoot the reference myself, or use references that are available online. "The Animal Motion Show" from Rhino House has a great collection of DVDs that help you study animal and human motions from various angles and levels of detail.

Keep in mind that, in my experience, most studios have a library of video references available for you to use. It will only improve your animation.



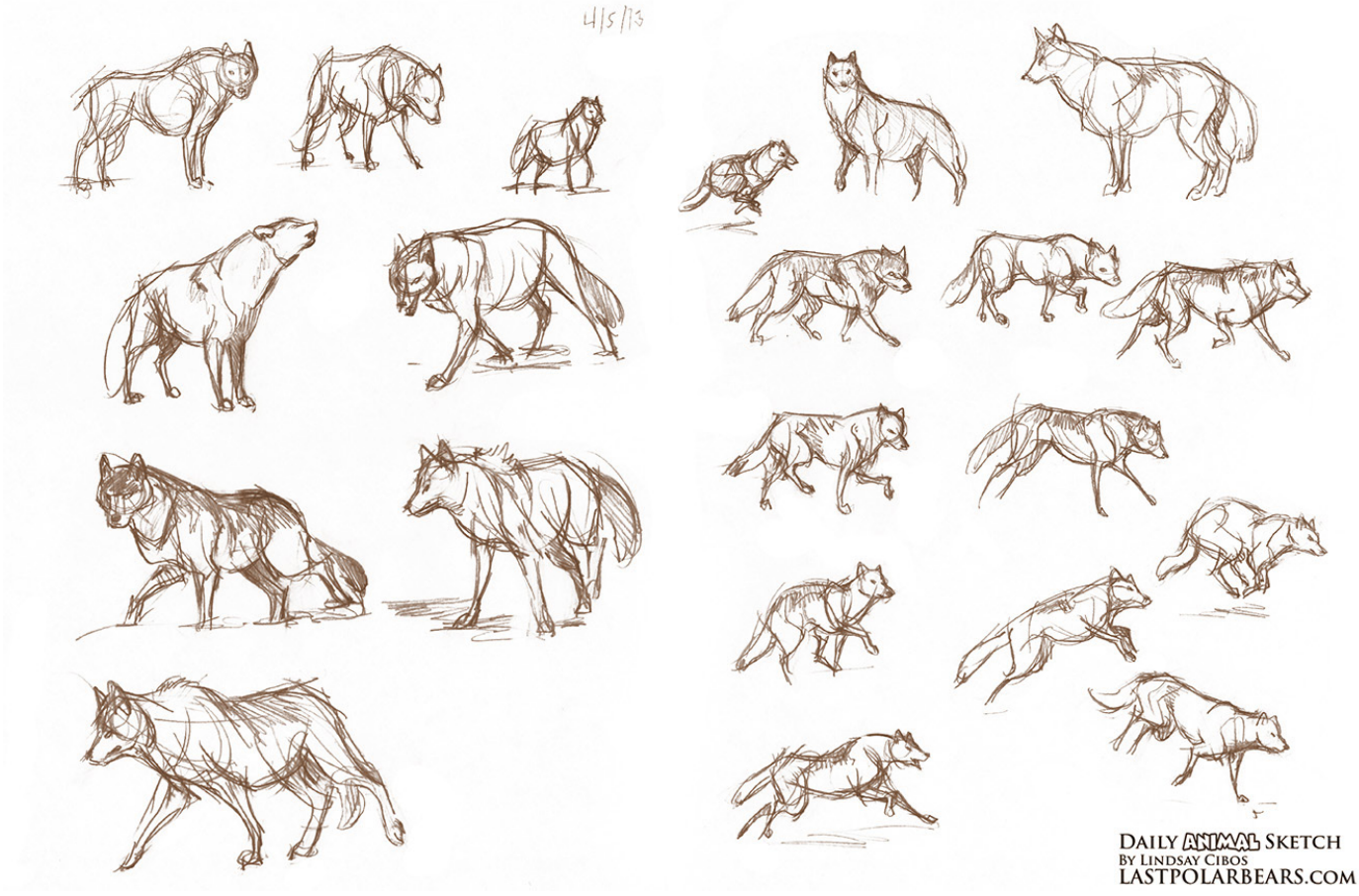

*Rhino House is a service that offers animal video references for artists. Animation Mentor students get 15% off to use Rhino House references.*

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My next step: I take the time to sketch and thumbnail my ideas on paper before committing to the computer because setting down poses in Maya can be time consuming, more so with a very realistic creature. Thumbnailing will save you lots of time and frustration down the road.

**How to Draw Animals** *is a helpful book to get you familiar with animal anatomy and to quickly thumbnail animals.*

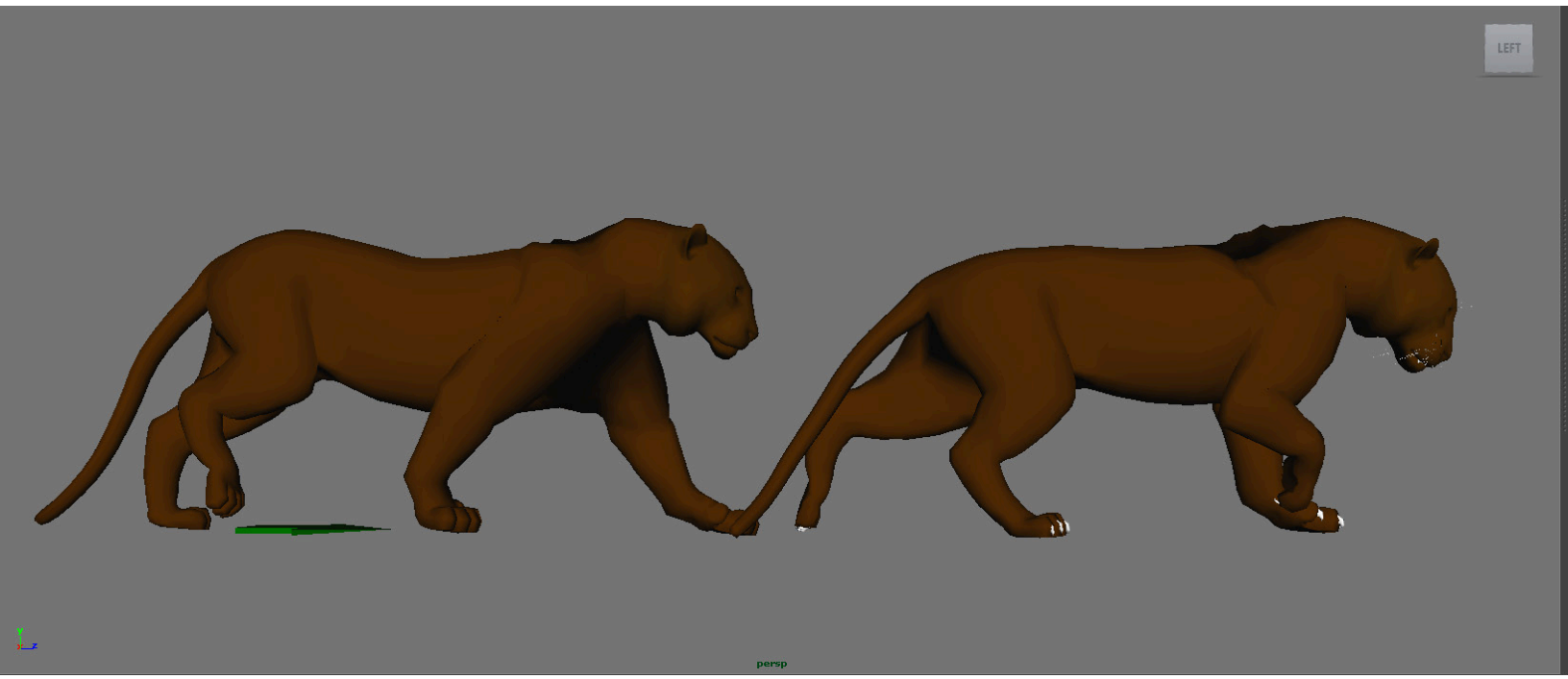



*An example of thumbnailing sketches*

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# Blocking

For this example, let's use a quadruped walk-cycle. I begin by identifying the main keys, just like a human character. The first poses I block are the full and mid-strides; I have noticed that whenever the front legs are in a mid-stride position the back legs are in a full-stride position, and vice versa.

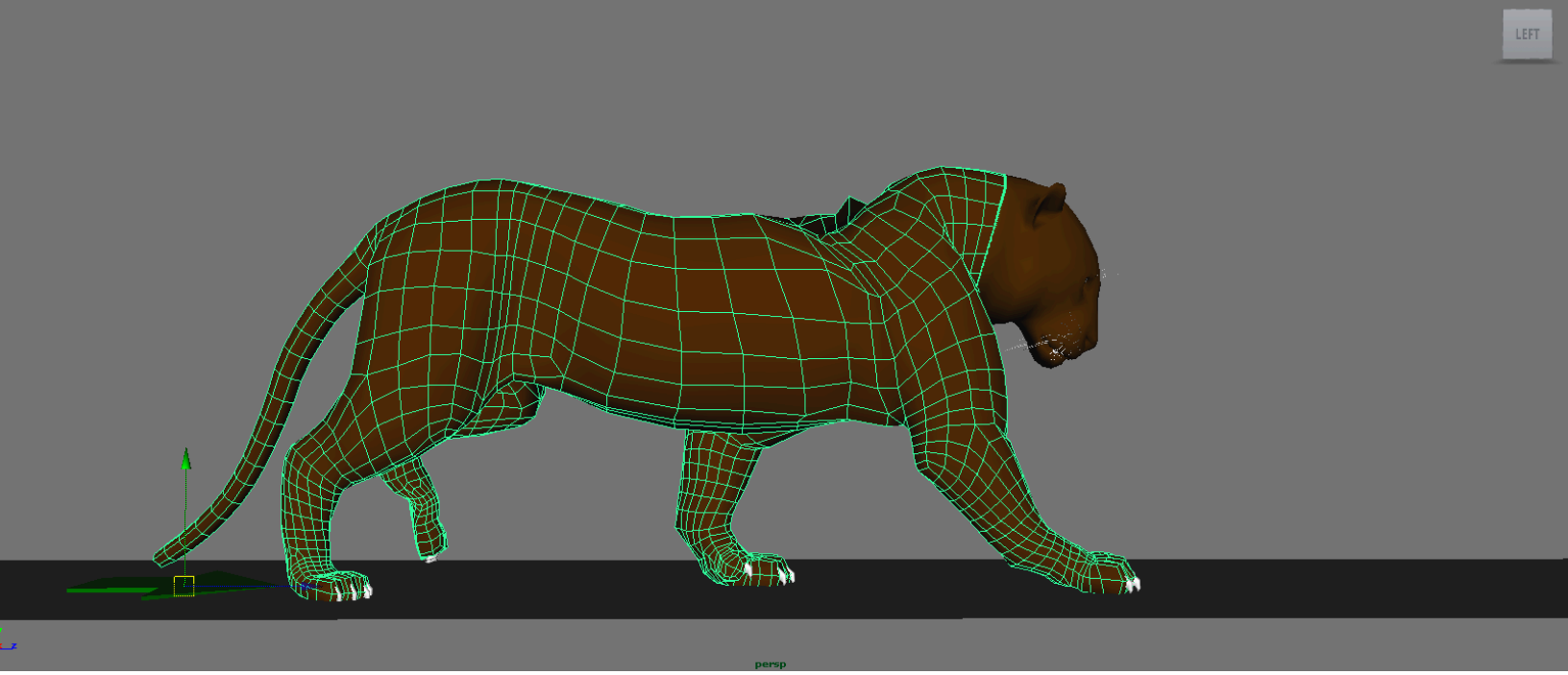



*Front legs are in mid-stride and the back legs are in full-stride.*

Hips are very important, they act as the engine or driving force in a walk. The head and shoulders are mainly used for steering of the character. Remember to lead with the eyes!

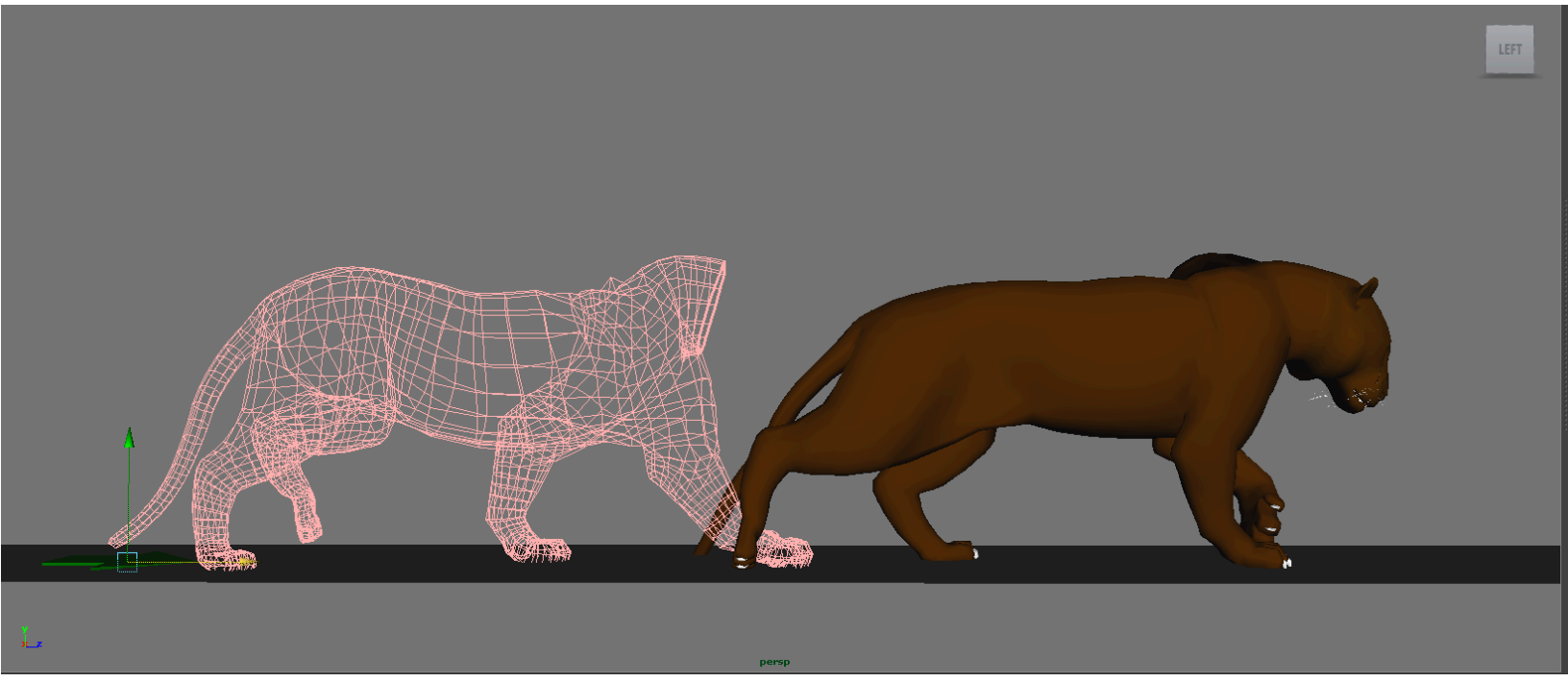
I apply the same mechanics to each pair (shoulders and front legs and hips and back legs) as I do to a human character. Each pair is dealt with as a individual one. For "mechanics", I am referring to rotation in the hips, center of gravity, the arcs, etc.

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*Hips are the driving force of the walk, head and shoulders "steer" the creature.*

As I block out my poses in Maya, in stepped mode, I duplicate the geometry of each pose and I assign them individually to a layer (so I can hide and "unhide" them later). I do this because it gives me a visual aid (targets) when it comes time to refine the curves in the graph editor. As I translate the animal forward to the next pose, I make sure that the placement of the body and feet make sense. See picture below. The translations and rotations of the hips are similar to the human walk; remember that the hips may have a bouncier translation than in a human walk.




*Block out poses in Maya in "stepped" mode. Steve duplicates the geometry in each pose to give him visual targets when it comes time to refine the curves in the graph editor.*

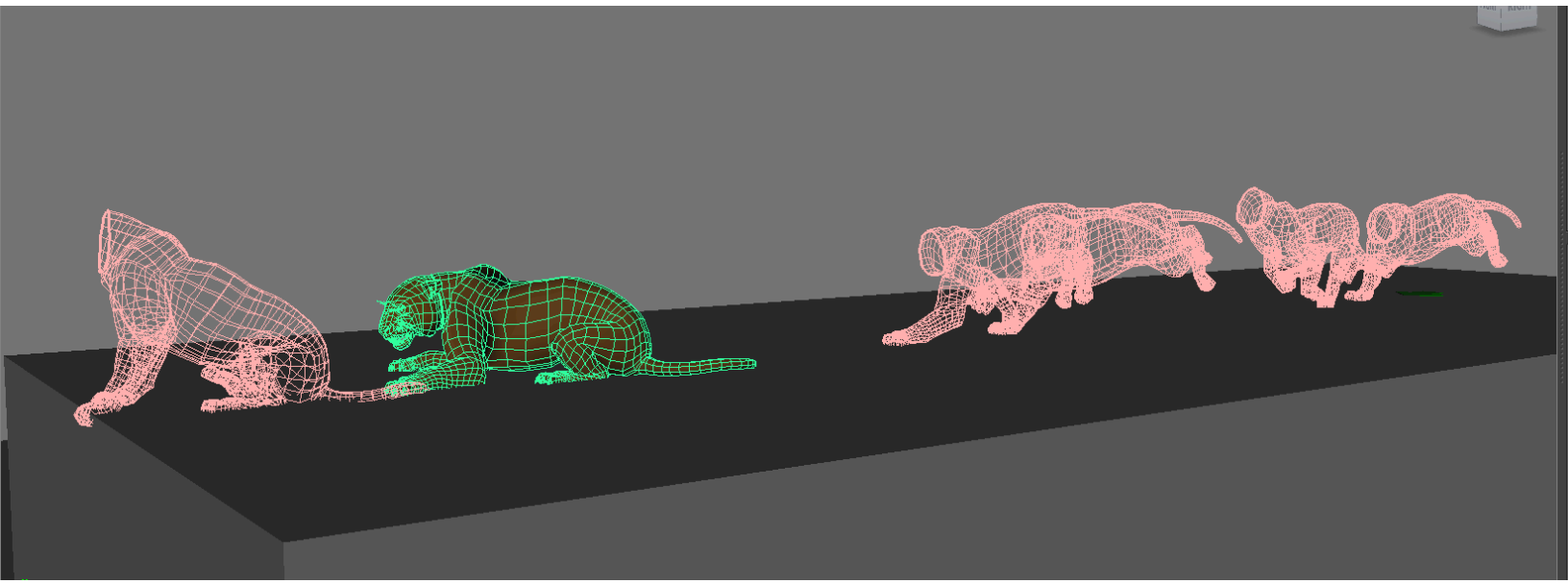
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Continue with the steps mentioned above; translate, key major poses, focus on full and mid-stride poses. After I'm done with that, I add my breakdowns, which in this case would be the extreme high and low positions of the hips and shoulders.

## Clean-up

I like my tangents in the Graph Editor to be weighted. I also unlock them. Weighted tangents and having them unlocked give me greater control. Afterwards in spline mode, I trim down the timeline to the first couple of keys to begin refining (see image below). I do this because it helps me focus on the first key poses and not worry so much the animation further ahead. I "unhide" the duplicate geometries that I need, created at the beginning of the blocking phase, this will give me visual targets when I refine the curves. When polishing I always begin with the core (hips spine and head). Here's a tip: I will hide other body parts in my perspective window to keep things uncluttered ex; tail, legs, etc. When I am happy with the first pass of polish in that section, I extend the timeline to the next few keys and I repeat the process.

Happy animating! ❖



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# 6 MISTAKES

## WITH CREATURE ANIMATION DEMO REELS



BY: SHAWN KELLY

*Not only is Shawn Kelly an Animation Mentor co-founder, he's also a 20+ year Industrial Light & Magic veteran where he works as a Lead Animator! His credits include **Avengers: Infinity War**, **Jurassic World**, **Pacific Rim**, **Rango**, and many more. At Animation Mentor, Shawn usually teaches Animation Basics and Creature Animation courses.*

More and more studios are hungry for animators who have experience working with animals and creatures in a more realistic style. Many recruiters at visual effects studios, video game studios, and commercials studios have a really hard time finding quality animator candidates as demo reels with strong creature animation are few and far between.

If you are interested in this type of animation, here are some of the most common mistakes I see on demo reels. Avoid these at all costs in order to create more believable and memorable creature animation and improve your chances of landing one of those jobs!

## The animation is too "clean"

Working in a realistic style (or, ideally, a slightly exaggerated "hyper-reality" in order to make your animation more exciting, dynamic, and memorable) means that you will need to have a higher level of detail and complexity in the movements.

This style of animation is an art in and of itself, and requires a slightly different mindset as you approach the work. You will still be using all of the principles of animation that you are used to, but in a more integrated and, often, a more "messy" way.

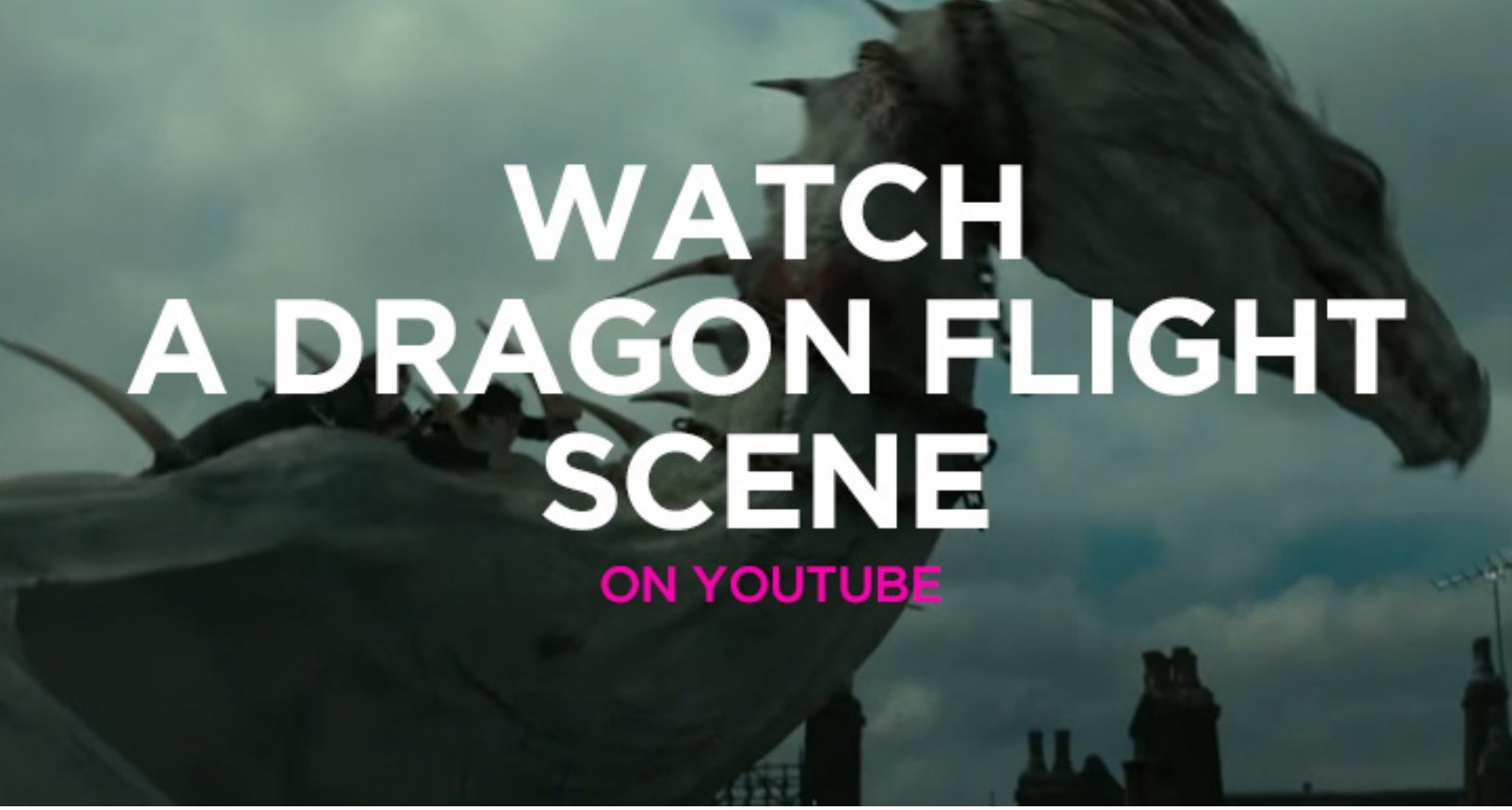
Adding some dirt to specific curves in just the right way, overlapping the actions while making sure they affect (and are affected by) each other, and being willing to have a slightly less perfect pose or arc at carefully chosen moments can make a huge difference in making your creature work feel real.

Keep in mind that this "messiness" needs to be very subtle. Readable silhouettes are just as important (if not more so) than ever and your arcs still need to feel organic, etc. Subtlety is key with creature work. In the Creature Animation classes, we work with the students to strive for "***simplified complexity,***" which I know sounds like words that shouldn't go together, but mastering this concept is a huge part of bringing to life a realistic creature.

Look for opportunities on your creature to add small little details, secondary actions, tiny overlapping actions, muscles firing and relaxing, etc – as long as these are all kept extremely subtle, they can all work together to create the feeling of one large thinking, feeling, breathing complex creature.

Once you identify areas that you can add complexity (this can be as simple as toes spreading as the weight presses onto the foot, or how that toe move affects the claw, etc), then it's time to simplify these

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*A nice dragon sequence from Harry Potter and the Deathly Hallows Part 2 - done by Double Negative*

actions in such a way that no individual "little" action draws attention to itself.

If someone's first reaction to your epic shot of a dragon roaring is to say "wow, that claw pressing on the ground during the footplant was awesome!" then you are doing something wrong. Those types of movements, intended to add tiny bits of complexity and realism, are not meant to be the stars of the show. They should be felt rather than seen,

> ... we work with the students to strive for "*simplified complexity*," ... mastering this concept is a huge part of bringing to life a realistic creature.

at least on a first viewing of the shot. The goal is that they will all come together to make that dragon feel huge and real, but the key to pulling that off is to keep them all a bit simplified and unnoticed.

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*References of gorillas running at the 2:09 mark*

## Action, pause, action, pause, action

Creature rigs tend to be more complicated and detailed than the average animation rig. Whether it's a cat or an ogre or a giant robot covered in moving parts or a dragon with complex wing controls, you can bet your bottom dollar that at first glance, the rig will probably look intimidating.

There's a reason for this, and it's because we need to achieve that high level of "simplified complexity" mentioned above, and you just can't do that with limited controls.

Unfortunately, that means that we often see animation on demo reels that have some interesting animal behavior or creature ideas, but those movements tend to be too broken up.

Instead of a gorilla running into frame and picking up a ball and throwing it, we see a gorilla run into frame and come to a stop. Then pick up the ball and stop. Then lift the ball and stop. Then he throws the ball.

Worse, often even those actions themselves can be full of discrete body movements that feel disconnected. Arms moving that aren't driven by the shoulders, shoulders that don't react to

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arms pounding onto the ground, big chest movements that have no effect on the hips, etc.

A careful study of live-action reference and a focus on overlapping actions can make a huge difference. Beware the feeling of disembodied limbs or discrete actions that don't flow through one another. It completely kills the illusion of an organic creature.

## The speed doesn't match the size.

Few things can kill a shot quicker than having something that is meant to be large zipping around the screen too fast. Often, animators are more used to animating humans, and we get into a routine of timings that we are used to. When you're thrown into a situation where it's time to animate a gorilla or a huge dragon, it can be difficult to wrap our brains around the timing and spacing that this character will need to be using in its movements.

This stands out especially in moments where a character is changing direction, starting an action, or coming to a stop. Often, I will see a large creature doing some cool action and then he comes to a stop that is far too abrupt to accommodate for his weight or to give time for his momentum to naturally dissipate. This kills the feeling of weight and ruins the illusion of size.

Remember – there is no single "correct timing that will work for all characters." They are all unique. They have different sizes, emotions, shapes, and actions – all of which will radically affect the speed that they will move.

## Look At My Imagination!

Imagination IS one of the most important aspects of animation. I don't want to belittle it or downplay the importance of actively working to cultivate and strengthen your imagination.

However, there are times to rely on your imagination and there are times to at least partly set it aside.

Even when working with a fantastic creature design, we need to carefully ground the movements of that character in the real world. Animating some alien quadruped? Look at its anatomy and figure out what quadruped(s) it most resembles. If you don't base the animation at least somewhat on those real-life animals, people are going to have a hard time buying the performance.

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*At the 6:50 mark in the video above, ILM Animation Supervisor, Hal Hickel, reviews creature design for the film, Pacific Rim, in this presentation at the Bloomberg Businessweek Design Conference in 2014. A nice reference on how the creature animator thought process works when animating alien creatures.*

Sometimes on reels, we see creatures who resemble the anatomy of animals we are familiar with and yet move nothing at all like them. There are probably times to do that, but I would argue that a demo reel is the wrong place, as your work has no context and very limited time to impress. If you have a lion running around like a lizard, we likely aren't going to marvel at your imaginative choices, we are going to think it looks bonkers and move on to the next reel.

## Rotoscoping

A direct copy of live action reference is going to give you some movement that will feel pretty good. It'll be solid, it will likely have a decent amount of that "simplified complexity" if you have really studied the reference carefully. It will be good animation.

But will it be great?
Probably not. Reference is a hugely important step to successful creature animation, but being a frame-by-frame slave to it is a mistake. Here's a couple more words that seem to not go together

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but are just as important as simplified complexity: subtle exaggeration.

You are the artist. Your job is to look at the reference and to make artistic choices. That's what makes your animation worth watching. As a creature animator or visual effects animator, your goal is realism, but that doesn't mean we aren't using the principle of exaggeration.

You need to filter your reference(s) through your artistic eye and carefully choose what to exaggerate. We make this pose a little more dynamic or that movement a bit snappier or this fall a bit heavier through the use of small (sometimes extremely small) amounts of exaggeration.

It's this carefully planned "subtle exaggeration" that will take your work out of the realm of feeling "rotoscoped" (which can easily start to feel dead or robotic) and give it that spark of life that makes it memorable and exciting to watch.

Your goal should be to make your work slightly larger than life. That's what makes it special, but of course the tricky part is keeping those exaggerations within the realm of believability and not "over-animating" the character to the point that it no longer feels real.

## Inconsistent style

A plague of many an animation test (creature-specific or not) is an inconsistent style. There is nothing wrong with stylized animation. All animation styles (from the cartooniest to the most photoreal) are valid and beautiful and none are more artistic or special than the others. What's important on a demo reel is that the style of the animation, at least within that specific shot, feels consistent.

Very often we will see a nice heavy creature walking along and then do something that feels far cartoonier than the previous few seconds felt and then revert back to Big-Heavy-Creature-mode. The middle of the shot will have quicker movements or overly stylized poses in comparison to the rest of the scene. It's common that part of a shot will suddenly feel "animated" rather than real.

Any time you are animating anything, it is important to know the style you are working in and keeping that consistent is a big part of an animator's job. Learn how to do that and show it off on your reel. ❖

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# ANIMATING TOOTHLESS

## INSIDER TIPS FROM HOW TO TRAIN YOUR DRAGON 2




BY: BARBARA ROBERTSON

*Barbara is an award-winning journalist living in the Bay Area. Her articles have been published in Computer Graphics World, Animation World Network, CG Society, Variety, and many more.*

Dreamworks' 2010 animated feature ***How to Train Your Dragon*** produced glowing reviews and Oscar nominations for Best Animated Feature Film for directors Dean DeBlois and Chris Sanders. This year, DeBlois, the voice cast, and many of the people on the 2010 crew bring us the eagerly awaited ***How to Train Your Dragon 2***, which is already receiving rave reviews from top critics. It's five years later in the story, as well. The young Viking Hiccup is now 20 years old and he and his dragon Toothless are now partners, friends, accomplished flyers, and intrepid explorers, which leads them to discover Hiccup's mother, and encounter unexpected danger. ***How to Train Your Dragon 2*** premiered at the Cannes Film Festival May 16 and is scheduled for US release June 13.

Dane Stogner, a former Animation Mentor student who joined DreamWorks Animation to work on ***Madagascar: Escape 2 Africa***, became an expert on Toothless during the first ***Dragon*** film. For ***Dragon 2***, he took charge of the hero dragon as Character Lead Animator for Toothless. We talked with Stogner about his experiences animating the friendly yet dangerous Night Fury.

## If you become a character expert, you might spend years animating that character.

"I've been working with Toothless for . . . for the better part of my life," Stogner laughs. "For almost six years now. I worked on Dragon 1, then the short ***Dragons: Gift of the Night Fury***. I was the first animator on ***Dragon 2***. I was brought on for my expertise with Toothless, and I had a working relationship with Simon Otto [Head of Character Animation]. I was on ***Dragon 2*** for two-and-a-half years – until early May."

## Systems might change from one movie to the next.

"***Dragon 2*** is the first show to use Premo, DreamWorks' new animation software system," Stogner says. "So I had to conceptualize how we could work with Toothless in the new system. I spent the first nine months on the show dividing my time evenly between Premo development, Toothless rig and library development, and animation. I worked with the face and body riggers to develop his face and body rig for the new software. Every way we interacted with the character was new."

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## New software can completely change the way animators work.

"We went from using, arguably, one of the most archaic animation software in existence to what I would say is the best in the business," Stogner says. "It's a giant leap forward. Premo, the new software, is always live. You can press play and it will play back in realtime with full resolution geometry and a bit of surfacing at any second. There's no such thing as a playblast. We can adjust curves and poses on the fly, even while it's playing. It's unbelievable. I think the developers started from the vantage point of what animators have always wanted and they made it.

"Premo was designed around the idea that animators would have a [Wacom] Cintiq. So, we can just touch and move the character. It is almost like stop motion sometimes. Even on the face. Just push and pull parts of the face around on the surface. We have fully integrated pose libraries, control hierarchies, ghosting, paths, follow cams, and built-in drawing tools with layers like Photoshop. The drawing tools were so easy to use I sometimes did 2D pencil tests in the shot on top of the background rather than shooting reference. It's exciting."

> For the first film, we mostly referenced black panthers, house cats and wombats for Toothless' body language.

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## Eyes alone can tell a story.

"Toothless has quite large eyes and square pupils," Stogner says. "When he's happiest and most friendly, his pupils are big and that makes him extra cute. Also, in order to make him cute and goofy, we tend to make him slightly cross-eyed. When he's aggressive and protective of Hiccup, his pupils narrow and his lids close quite a bit. There's a time in the story where he isn't totally in control, and we had to make sure it was clear to the audience that it wasn't his fault and that he wasn't aware of his actions. We did most of that by keeping his lids wide open, having his pupils narrow more than they ever had, and making him a bit wall-eyed.

## Having a small range of expressions doesn't make it easier to keep a character on model.

"Toothless's face is a touchy thing," Stogner says. "It's easy to take him off model. In fact, most of the toys make him look off model. There are even moments in the first film that the Toothless experts on our animation team agree that by today's standards, are off model. It's the angle of his eyelids. The size of his eyes. The orientation of his pupils. The amount his nostrils flare. The way he does or does not pull his lips back to reveal his teeth. The way he poses his ears. A good example is his brows. It's difficult to give them a classic worry shape because he looks really weird and square and has a 'skull' appearance.

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## When you can't animate a character's face to create the emotional performance you want, move his body.

"Because Toothless has a lot of screen time and he's Hiccup's companion throughout the film, we needed to give him a wide array of emotions," Stogner says. "But, animals don't have the same facial range as humans. So, we interject more behavioral and body language to give him those emotions."

## Animals provide good reference, even unlikely animals.

"For the first film, we mostly referenced black panthers, house cats and wombats for Toothless' body language," Stogner says. "He was very cat-like and stand-offish and mysterious, a scary creature that Hiccup had to befriend. So cats were appropriate. But, two out of three of us Toothless experts, and even Dean DeBlois himself, are greater fans of dogs than cats, and I think there's legitimacy in the story for having his personality come across more puppy or dog-like in this film. He's been living with Hiccup for five years. In addition, my favorite pet was my rabbit Waxwick, so I used any opportunity I could to throw in a little rabbit flavor. I'll definitely try to add more in the next film. There's a little behavior rabbits do that rabbit fans call binkying where they hop in circles. It's really cute. They look a little like they're having a seizure, but they are just happy.

## Sometimes there's no animal to imitate.

One of the shots I did early on was of Toothless walking around on his hind

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feet like a biped with Hiccup dangling from his neck. He has a bit of a funny walk. We saw a hint of that in the first film in the 'Forbidden Friendship' sequence. In this film, we see him full frame walking to the edge of a cliff with his legs straight in this goofy, goose-step walk. It's one of his most surprising moments."

## Study flight before performing a flying creature.

"We had this thing called flight school on the first film, and we repeated it for the second for anyone who needed or wanted it," Stogner says. "Simon Otto developed a complete curriculum. What flaps actually do. Everything to consider. That's how everyone became able to make flights somewhat believable. And then it just took a lot of practice. On the first film, we were praised for our flying shots. We cared a lot about making the flying as believable as possible, and Simon was a real stickler. We learned from the first experience and from how specific Simon was about it. I hope we can get the same praise for this one. In this film Toothless is on the ground a lot because Hiccup is grounded a lot, but we have some spectacular flying sequences. Memorable ones."

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## Remember that dragons are heavy.

"If I'm going to get serious about it, these dragons weigh at least a ton," Stogner says. "They have to have weight when they fly. For reference, we watched videos of owls, hawks, and eagles, and since dragons don't exist, we looked at a lot of good and bad examples of animated dragons. We saw so many example of really beautifully modeled and surfaced and lit dragons that looked amazing, but . . . Just this weekend, I saw an incredible render of a dragon in a TV show that was hovering weightless, flapping its wings. There was no drag of his legs or drop in the body."

## A correct wing pose helps animators create believable flight.

"We made sure Toothless's wings had an airfoil shape to them, curved on the top and flat on the bottom like airplane wings," Stogner says. "That's also reflected in nature. It primarily produces the lift in flight. And, it also looks better. It goes a long way toward making it physically believable."

## Air is not static.

"Air is a physical medium with varying pressure and wind speeds," Stogner says. "If you have a dragon too still, it

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doesn't look right. You want to feel the turbulences and those fingers on the wings rustling. You want to make little adjustments to keep him stable – dips, drops, rises in the body – to make him feel like he's moving through something as chaotic as air."

## Wing "fingers" matter, so the more macro controls, the better.

"We had macro controls on the first film so that with one animation curve I could bend all of Toothless's wing fingers at the base, or splay or curl them," Stogner says. "This time around, I wanted inner, outer, and tip curls, bends and splays. We had three times more macro controls on this film. I don't know how many other animators used them, but I did in every shot. Each wing has eight fingers and each finger has five joints. They are like enormous long hands with extra fingers. I could move each one of the dozens and dozens of finger joints individually, but it was easier and faster to manipulate the motion with a handful of macro controls."

## And when animators can work faster, Toothless can fly better.

"Other than creating more macro controls and refining the wing rig behavior, we didn't develop or learn anything new in how to make flight believable," Stogner says. "But, the speed of Premo allowed us to make it look better. We had more time for details because we didn't have to wait for recalculation of frames every time

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we adjusted a flutter. We could adjust every flutter and watch it play back instantly. I would have liked for him to have been in the air even more."

## You never know who or what might affect a performance.

"Hiccup's mother reveals new secrets that even Toothless himself didn't know," Stogner says. "His spikes split in two and he can open and close them for aerial maneuvers. He also has new physical capabilities. Hiccup designed a new saddle for him that has new functionality and rules for how it affects him and his flight."

"There were also some tiny model changes that only super fans noticed. He has nubs on his jaw. Those were just extra details we added for this film. But, the fans hypothesized that perhaps the nubs were a sign, much like Hiccup's chin stubble, that Toothless had aged. There's a shot where Hiccup's mother says, 'Look, he's your age.' James Baxter, a supervising animator on the show had seen the super fans' theories. So he made the choice to have her point to the nubs. The fans influenced the movie." ❖

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# CREATURE ANIMATION

## A STUDENT SHOWCASE BEHIND-THE-SCENES

BY: ANIMATION MENTOR

*Animation Mentor is the first original online animation school. Professional animators currently working in the industry teach aspiring animators the art of animation.*




Sometimes we sound like a broken record when we talk about the importance of solid creature animation skills, which is why we're so glad when we're proven right! The four creatures shots in this year's student showcase were truly exceptional.

Creature animation shouldn't be thought of as a separate category of animation, but instead an important tool that every animator should have access to. Whether it's capturing the essence and weight of an existing animal or inventing believable behavior in fantasy creatures, animators that tackle these shots have sparked our imaginations in a powerful way. This is definitely true of these shots by Hiran Solanki, Kristian Carstensen, and Szilárd Hadobás. Enjoy!

## Hiren Solanki
### London, United Kingdom

There's such solid weight and timing in Hiren's shot. It's a good study and application of a gorilla reference to a fantasy creature. The weight implied in this shot really helps to ground the character into the environment, which helps sell the believability.

### Animation Mentor: Tell us about your process for creating a showcase-worthy shot!

**Hiren:** I am very happy that my Ogre shot was deemed showcase-worthy and ultimately made it onto the reel.

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This shot was created for the second assignment of the Creature Animation: Locomotion workshop, so I believe we had around four weeks to work on it. Coming off a standard cat walk for Assignment 1, we were asked to animate a more advanced creature locomotion for Assignment 2, such as a creature transitioning through different motion gaits e.g. from trot to run, from rest to walk etc.

The first week was spent just deciding what we wanted to animate, gathering reference material, thumbnailing, and essentially just understanding the animation as much as possible before actually starting to animate. In the second week we began to block out the animation, and the following week was spent on refining this simple blockout. The final fourth week was spent on polishing and finishing touches—of course feedback from our mentor, Alvise Alvati, during our weekly e-critiques and Q&A sessions informed our progression and action points throughout the assignment.
I generally stuck to the workflow that was set out by the course itself, and this process worked well for me as I was able to catch and address any fundamental issues at an early stage.

When blocking the animation, I was finding it challenging to work out the foot and hand placements of the ogre character. I was using gorillas and apes as reference for my animation, however even after collecting a wide array of reference, it wasn't clear that apes tend to move with a diagonally oriented spine (from a top down view), so that their hips are offset from their shoulders, enabling their feet to move in-between and outside their hand placements. Alvise directed me toward a great piece of reference that demonstrated this more clearly during a Q&A session. Learning this early on allowed for things to fall into place more correctly and saved me a lot of headache.

My inspiration came largely from a shot animated by Animation Mentor Alumni, Haokun Liang. Haokun had animated a very impressive shot using the same ogre rig moving through a similar rocky desert terrain. He had done such a great job, I aimed to get similar results. Polishing the animation with the time I had was very important to me, and since I was working full-time already, I had to fit Animation Mentor around my job, which meant working long hours mostly on weekends. But, as we all know, animation does take time, dedication, and care, especially if you want to end up with a showreel shot, or as in this case a "showcase-worthy" shot.

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## AM: What made you want to become an animator?

**Hiren:** It may sound cliché, but I always loved to draw from a young age, in particular characters and images which told a story. As such, I naturally gravitated toward creating my own characters, comics, character-based card games, magazines, etc.

Before my teenage years, my passion for drawing and creating comics was fueled by my discovery of Japanese anime on TV in the late 90s; I began to develop my art style more while searching for whatever "How To Draw", and particularly "How To Draw Manga", resources that I could: whether it be through books, the web, friends and seeking out feedback from established artists and fellow aspiring artists. Through my love for drawing, comics and anime, I thought to myself (somewhat naively) that the next natural step would be animation. Thus my focus began to shift from comics and more towards animating and ultimately I went to University to study animation.

## AM: What will you remember most about your time studying with Animation Mentor?

**Hiren:** The thing I will maybe remember the most from my time studying at Animation Mentor is my mentor, Alvise Avati. The e-critiques and and detailed Q&A sessions we had with him really helped to push our work that extra mile. He was always more than happy to help and spend extra time going through things with us: not just limited to assignment work but also answering any questions about industry, show-reels, applying for jobs, etc. I appreciate all the help and insight he gave us.

## AM: Where are you working? Tell us a little about your job and your day-to-day!

**Hiren:** I am working as a Senior Animator at a London-based games studio called Mediatonic. My day-to-day does tend to pivot a bit depending on the project and project needs, but my current focus is on character animation—creating movesets for game characters ready to be hooked up in engine.

Fundamentally, character animation remains at the core of my role, but since we tend to work in small teams, my day-to-day could also include other tasks ranging from rigging, creating particle FX, UI animations, editing footage, mentoring other animators, etc.

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Of course as artists we are always looking to improve and develop our skills (my primary reason for taking the AM course), so receiving and giving feedback is also an integral part of an animator's job, thus we have frequent reviews with our Art Director and critique sessions amongst the animation team in the studio.

### AM: Last but not least, what's your favorite animated movie?

**Hiren:** It is difficult to pick only one movie, but if I had to, it would probably be Yoshiaki Kawajiri's Ninja Scroll. Although I think my overall favourite animation will always be the classic ***Dragon Ball Z***. Both of these, amongst many, many other titles, have greatly inspired and influenced me as an artist, and essentially it is because of animations such as these that I am an animator today.

## Kristian Carstensen
### Histon, United Kingdom

This shot is working really well! Great mechanics and solid weight help the believability. It's also really nice to see the emotional change as Dozer realizes there's an incoming threat. That, along with the clear posing, elevates the storytelling of this shot and really makes it stand out. The contrast between all three characters is fantastic, between their different weights, timing and posing, and emotional states.

### AM: Tell us about your process for creating a showcase-worthy shot!

**Kristian:** For the shot that ended up on the showcase reel I wanted to challenge myself by having multiple characters interact, and I wanted my main character to be making a decision and acting upon it. That was my initial brief to myself.

I always enjoy when animated characters touch and interact convincingly, so I wanted to see if I could pull that off and so I looked at references of apes and bears—which are generally quite gentle and caring creatures—and found several examples of them carrying their young around. Then I added a dragon for drama, and there's the story.

I really love creating stages for my action, and so I used AM's desert environment and a bit of custom modelling to create a scene of a pipe with water flowing out of it, as I needed Dozer to run and hide from the dragon. Our mentor, Nicole Herr, asked us to do something we'd never attempted to do within Maya for this shot, so I decided

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to attempt to create a decent water shader for the outflow. Ideally I would have liked to have had some water splashing around Dozer as she runs, but unfortunately I ran out of time.

The hardest part for me, as ever it seems, was fitting all the beats of action within the allotted frame range we were given without rushing things. My initial thumbnail planning always has more going on than I can reasonably fit within a given shot. So I usually have to cut out half the ideas and that about does it.

I created this little making-of




video of my process with the shot as well.

## AM: What made you want to become an animator?

**Kristian:** I pretty much always wanted to be an animator—I think, even before I knew what an animator was. I was completely fanatic about Disney's classic films as a kid and always wanted

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to somehow be involved with creating those characters and films that I loved. I always read all I could about the making of films and the world of animation still continuously blow my mind with what is being created around the world, and I'm thrilled to be a part of it.

## AM: What will you remember most about your time studying with Animation Mentor?

**Kristian:** We just had a baby girl a few weeks prior to doing the Creatures Workshop, so the thing I remember most clearly from my AM time was trying to manage my time between baby stuff and getting animation done. It turns out you most definitely cannot animate with a baby at your desk. I tried strapping her to my chest, but alas, it's impossible

## AM: Where are you working? Tell us a little about your job and your day-to-day!

**Kristian:** Right now I'm working at Cinesite VFX in London on ***Avengers: Infinity War*** where I'm surrounded daily by really great animators that are all super friendly and helpful. My days are spent animating and addressing notes, mostly addressing notes actually… It really stretches your animation skills having to change things, cut out ideas, insert new ones, and still stay within the deadline.

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*Another great example of interaction with animated elements. It really feels like the cat is tugging on that weapon! The weight and impact conveyed in this shot work so well too and makes both the ogre and cat feel grounded in the scene. A great example of interaction, storytelling, weight, and mechanics all working in concert.*

## AM: Last but not least, what's your favorite animated movie?

**Kristian:** My favourite animated movie…that's a two hour conversation. But if pressed on it I'd have to cheat and split it up into two categories. VFX type films and Feature Animation. So, it'll be Peter Jackson's ***King Kong*** and Pixar's ***The Incredibles***.

## Szilárd Hadobás
### Andornaktalya, Hungary

There's a great sense of interaction between the live action footage and the animated character in this shot. It really feels like there's a back and forth reaction between them. Also we can see how the weight of the dragon is really being conveyed as lighter, and that's through careful attention to the timing and spacing.

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## AM: Tell us about your process for creating a showcase-worthy shot!

**Szilárd:** My shots were the dragon lighter and the ogre-cat live action shots. The dragon one was the first, and I just wanted to use one of the plates provided by AM because I was a big advocate of focusing on the animation instead of other tech stuff. But then the next week I felt that a general flyby animation would be flat and lack originality, so I decided to do something different.

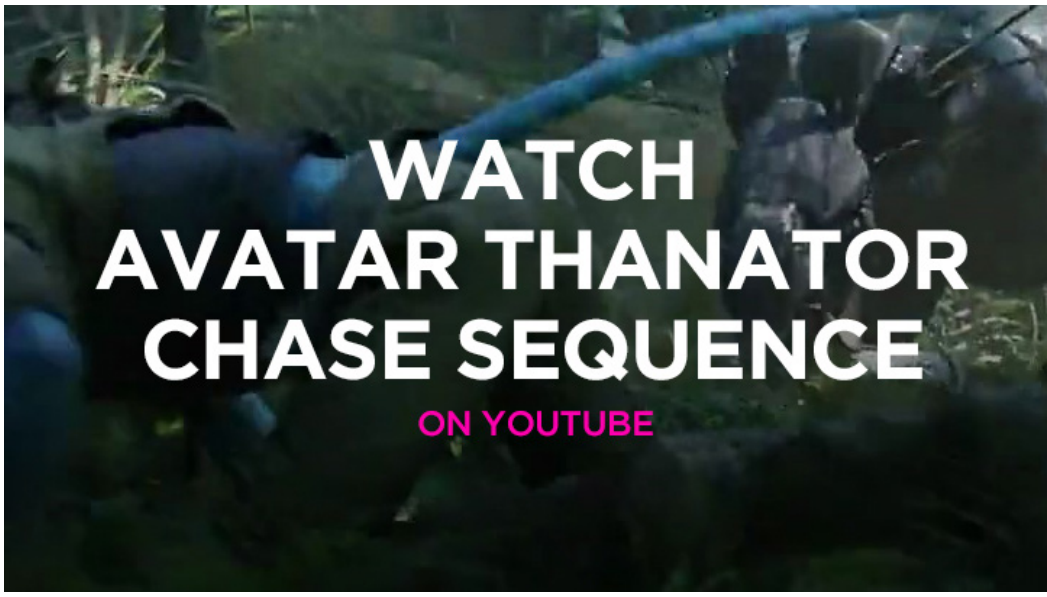
The idea itself came into my mind in a split-second like a flash. I immediately started to look for references, and a few hours later I shot the plate using a camera and motion capture system. In a few days I had a solid blocking. I could work fast because that was something I loved to do. If you want to know more about the process here's the making-of video.

I was struggling a lot on the plot of the ogre shot because the dragon was so original and successful that I wanted to show something even more innovative. I was considering a shot of some creatures riding each other for about a week, but I thought that was not exciting enough. So, I talked to my buddy who works at zLense developing a revolutional affordable markerless camera rig so we could arrange a shooting. Since they had rails laid on the set, we decided to create a shot with a larger camera move, like a chase scene.

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My main inspiration was the ***Avatar's*** Thanator chase sequence, but I wanted to add live-action and CG interaction and a twist to the end. The technical difficulties were enormous—like converting the AM rigs to be able to use in the Unity game engine, bringing back the recorded camera data from Fusion, and messing with the recorded depth info as the live-action plate—but I really loved being a pioneer with all of the challenges. Overall I can say that time was




my greatest enemy in this shot, but finally I could finish the animation before the deadline despite the shooting happened at the end of the third week.

In this shot the lighting, rendering, cat texturing, groom, and compositing were done by my friends. I am responsible for the idea, animation, and direction.

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## AM: What made you want to become an animator?

**Szilárd:** I climbed the usual ladder of CG, starting with modeling and texturing in high school in 1997 with the good old Imagine 2 making shiny glasses and cups and other objects just for fun. Lightwave was the first program where I could animate rigid bodies like starships planets and other mainly celestial objects. 3ds Max opened new horizons with skinning and bones in 2001. I still did modeling for years in games and learned scripting, which lead me to my first feature job. In the pre-production all tools was done so I started to animate to keep my job, and it turned out that I am not totally talentless in this field. I learned a lot of animation on that show and that planted in me the deep love toward this form of art.

## AM: What will you remember most about your time studying with Animation Mentor?

**Szilárd:** The Q&A's were by far the best times of AM. Listening to an industry pro talking about his/her work and our shots, and I could feel the passion. It was extremely inspiring and fun as well.

## AM: Where are you working? Tell us a little about your job and your day-to-day!

**Szilárd:** I'm working at MPC London, at the moment, on a new Disney live-action feature. AM knowledge is perfectly usable, and what I learned here made me confident from the very beginning of the contract. The work itself is not super easy, but live-action and CG contact always was challenging. Something what I expected spiced by some fun with the technology.

## AM: Last but not least, what's your favorite animated movie?

**Szilárd:** My favourite one is ***Anomalisa***. They could bring the characters close to the audience despite the unique realisation. For me that is the best example how someone can bring a character to life. ❖

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# TOP 5

## ESSENTIALS OF ANIMATING CREATURES




BY: JEAN-DENIS HAAS

*Jean-Denis Haas is a long-time mentor of Animation Mentor, a creature guru, and a senior lead animator for Industrial Light & Magic! He's worked in **Star Wars: The Force Awakens**, **Star Trek: Into Darkness**, **Harry Potter and the Order of the Phoenix**, and many more!*



As a studying animator you're quickly exposed to the principles of animation and the basic exercises that help you learn and understand said principles. Everybody goes through the bouncing balls exercises, pendulums, all the way to the first basic walk. But after having animated a walk you're tempted to continue with a biped and to dive right into human body mechanics, capping it all off with acting performances based on audio clips.

So why should you learn creature animation?

The following five points illustrate my thoughts on that question and what to look out for when you do decide to animate creatures.

## 1. Most companies feature creatures in their movies.

The question of why should I learn creature animation is easily answered by listing top animation companies and the movies which include creatures, either based on fantasy or existing animals:

**Pixar Animation Studios:** ***Coco, Finding Dory, The Good Dinosaur, Monsters U, Up, Brave, Toy Story 3, Up, Wall-E*** (the cockroach!), ***Ratatouille, The Incredibles*** (yes, there's a cat in it!), ***Finding Nemo***, ***A Bug's Life, Toy Story,*** etc.

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**Blue Sky Studios:** ***Ferdinand, Rio, Epic, Ice Age: Continental Drift, Rio, Ice Age: Dawn of the Dinosaurs, Dr. Seuss' Horton Hears a Who!, Ice Age: The Meltdown, Ice Age***



**Dreamworks:** ***Penguins of Madagascar, Home, Turbo, The Croods, Rise of the Guardians, Madagascar 3: Europe's Most Wanted, Puss in Boots, Kung Fu Panda 2, Megamind*** (the fish!)**,** ***Shrek Forever After, How to Train Your Dragon, Monsters vs. Aliens, Madagascar: Escape 2 Africa, Kung Fu Panda, Bee Movie***

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As you can see the majority, if not all movies on companies' resumes include creatures. I could continue with a list of movies for Disney, Sony or add movies like "***Free Birds***", and this only covers feature animation. If you look at the resume of companies like Industrial Light and Magic, WETA, Tippet, Sony, or the late Rhythm & Hues, you will quickly realize that creatures are an essential part of the work animators do at these companies (and many other companies I haven't listed).

So when you assemble your reel you have to think about the target audience, meaning, your reel has to be tailored towards the company you're applying for. An animation reel for Pixar is going to look vastly different than a reel for ILM. It's important to study what a company is working on and what type of animation they're doing style wise, but it's also important to look at the type of characters.

So in short, why would I want to learn creature animation? The answer is because the moment you start working at a company chances are that's what you will be animating.

## 2. Diversity in your reel.

If you look at student animation reels focusing on feature animation you will most likely see a 20 to 30 year old male or female human character performing a variety of actions. For a while it was mainly a male character, due to the limited availability of female character rigs, but thankfully female rigs are more accessible nowadays.

Still, I wouldn't say that it is common to see a really old character, or really young, or skinny, big, tall, etc. and the lack of diversity is really limiting your reel. Each shot on your reel should demonstrate a new skill set, ranging from weight, body mechanics, pantomime to performance. You don't want to have 10 weight lifting exercises, but to me the same goes for characters. Why would you want to show the same type of character over and over? I don't think it highlights your skill set enough and it is also limiting your acting performance possibilities.

When you start animating creatures don't just think in terms of realistic creature behavior where you apply what you've been studying in your reference material. Don't limit it to just a study of real life. Think about how you can use specific animal behavior to supplement and enhance your acting performances. Once you start adding creature animation to your performances you can get a very interesting mix of both worlds by going back and forth between

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creature behavior and human acting.

For example, imagine a creature moving from A to B to an object, inspecting that object and then delivering a line of dialogue. That type of shot displays creature locomotion, anthropomorphic performance through pantomime supplemented by lip sync. That's three different type of exercises combined into one. It gives you the opportunity to show that you've studied how the creature moves and how you stylize that movement so it's not just rotoscoped. You can then also show how you transition from body mechanics to performance and how the creature's distinct animalistic features influence the performance. A good example would be the snake Kaa from Disney's ***Jungle Book*** with the constant tongue hissing.

In short, once you start mixing animalistic and human behavior you get a much bigger variety

> A lot of complex creature animation can be reduced to bouncing balls and it all comes back to being able to show proper weight through timing and spacing.

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of acting choices which makes it more entertaining to watch but at the same time you're also able to demonstrate different skill sets within one shot.

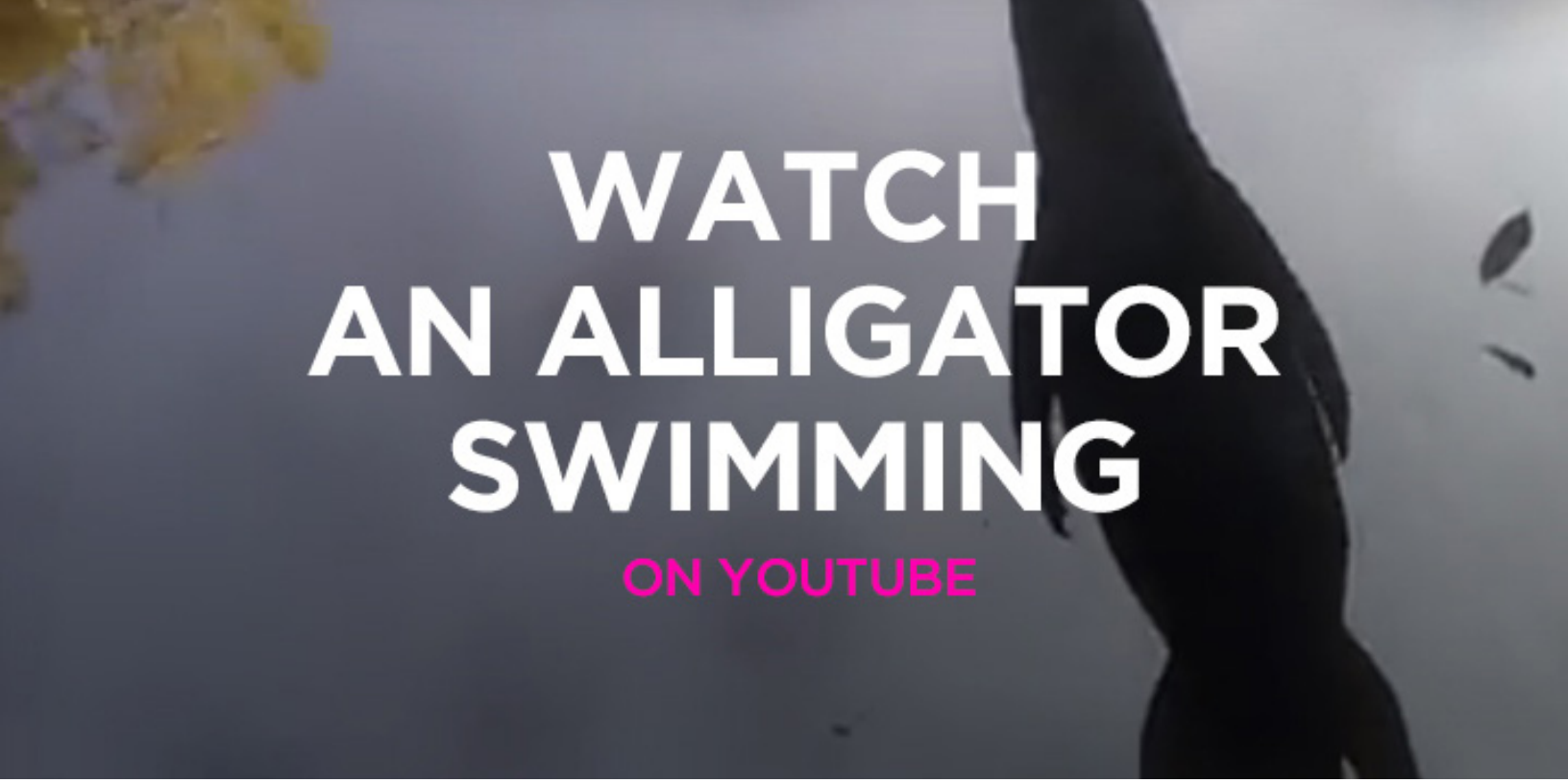
## 3. Root the performance in reality.

One of the essential aspects when it comes to depicting creature animation with a bigger emphasis on realistic behavior and animalistic performance is to base your creature movement on a real life counterpart. If you have a fantasy creature with a very abstract design and you put on top of that movement and behavior that resembles no living creature on this planet then the audience might completely reject that creature and never feel any sympathy or empathy towards it.

The moment you have behavior that's even just a little bit similar to an existing creature the audience will be able to make a connection based on familiarity and ground that fantasy creature in reality. A common example would be to study gorillas when animating ogres. I'm generalizing but it's a good starting point. If you're animating a dragon, does the dragon use its wings for movement on the ground? If yes, then bats would be good reference material.

You can also combine multiple animal behavior and mechanics, but be careful to not just pick an animal because it looks the same as your creature. You have to consider size discrepancies and environmental influences. By that I mean, your creature might look like an

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eagle so you're tempted to use the flight mechanics and timing of that animal, but what if your creature is a lot smaller than an eagle or a lot bigger? You might love how a hummingbird moves but does that type of movement work on a creature that's as tall as a skyscraper? Your fantasy creature might live underwater but look like a land-based creature, so is it going to swim like an alligator or like an elephant?

The creature might live in an environment which is exposed to really heavy winds and storms, so the flight mechanics or ground locomotion might be more influenced by creatures who are able to withstand such forces of nature as opposed to just going by visual similarities.

Of course you might run into a situation where none of that matters and the main objective is to make it look cool, but I would say most of the time it's very helpful to add real life behavior to a fantasy creature in order to make it feel more "real".

## 4. Get the weight right.

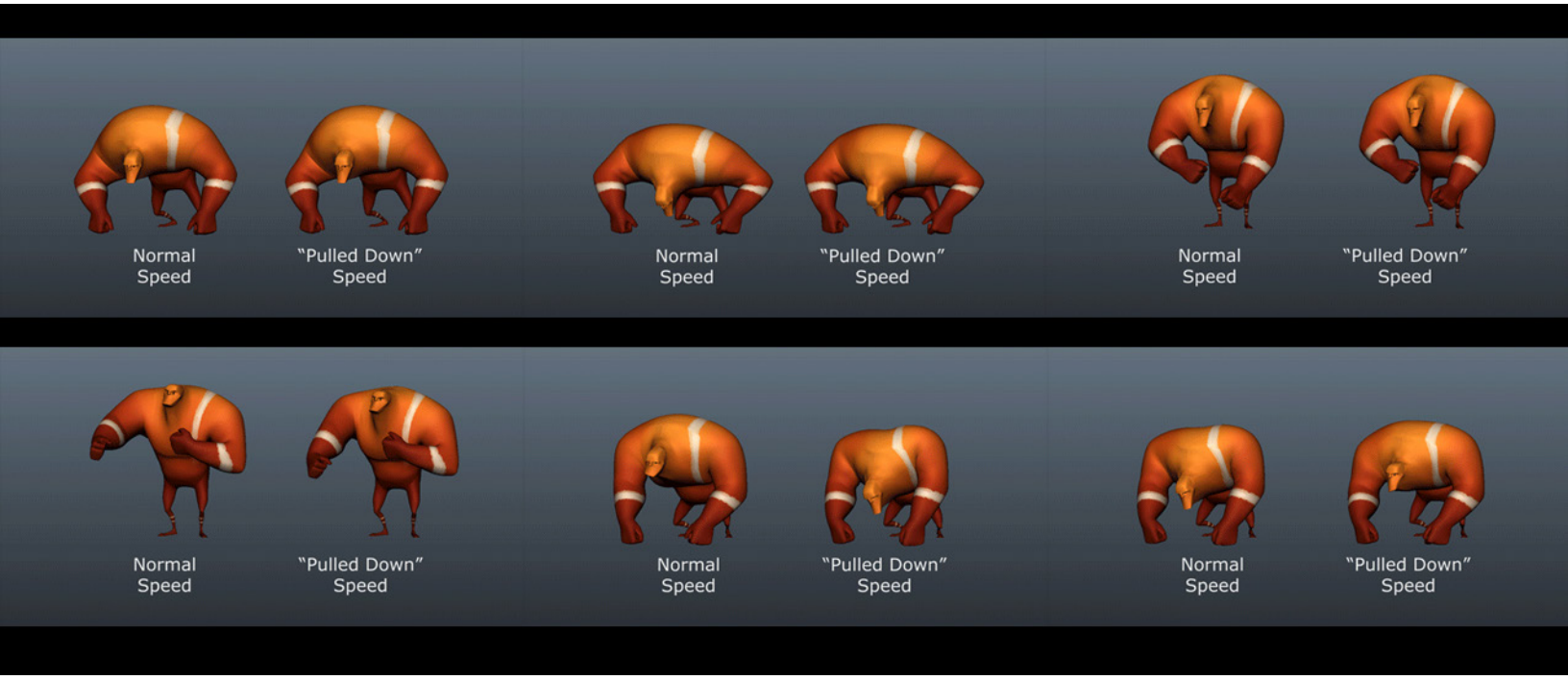
Physics are very important regardless of the style of your animation. The more stylized your animation is the more freedom you have to tweak physics of course but the moment you ignore proper weight distribution, conservation of momentum and dissipation of kinetic energy, believability goes out the window. There is a reason why every student should start with bouncing balls. It's really important to master the

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illusion of weight. Can you make three balls of the same size look and feel like a bowling ball, a basketball and a balloon? A lot of complex creature animation can be reduced to bouncing balls and it all comes back to being able to show proper weight through timing and spacing.

For this point I want to concentrate on a specific area that can make or break your shot. It's something that is missing not only in student reels but also in feature movies (for different reasons though) and an area I have to constantly pay attention to. It's the difference between muscle driven movement and physics driven movement.

For example: if you take an ogre that rests on all fours and rears up to pound his fists against his chest and falls back down, you have a clear separation of muscle and physics driven physics. When it gets up at the beginning it's all based on the strength of the arms, legs, chest or whatever is driving that motion. The speed and weight is determined by the muscle groups and body mechanics, which gives you a certain flexibility in terms of timing and weight, but the moment the upwards movement hits its apex and is coming back down it is purely driven by physics. The ogre won't be able to fall down faster than physics dictate. The only way to achieve that is if the ogre is pulling himself down or is being pulled or pushed down by an external force.




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Circling back to my feature movie comment above, one of the tricky things when dealing with life action plates is that you might have to alter your animation based on the existing camera move. The camera could tilt down too fast, forcing you to accelerate the character's drop in order to keep it in frame, or a live-action element might explode at a certain frame and that will dictate the timing of the character's touch down while having to consider the timing of the initial camera tilt up for the jump, etc. etc. There are unfortunately a few limitations when dealing with live-action plates.

But if times permits and the camera move allows you, make sure that your creature is not breaking the laws of physics, even stylized physics, when the movement is not based on voluntary action like a push off or jump and involuntary action like an external force pulling or pushing you down (or up, or sideways, etc.).

## 5. Interaction between creatures.

Contact between two or more characters is difficult to pull off in CG animation and you rarely see it on students' reels. It's understandable since it is already difficult enough to make it all work with one character, let alone two! But today's animation landscape is very competitive and interaction between characters is a great opportunity to go above and beyond and add more complexity to your shot, and creatures offer great opportunities to do just that.

For example: imagine the interaction between a mother and her kids. Depending on the type of creature, they could be hanging on to her, resting on her back, crawling all around her. Going back to what I mentioned about performances, what if you combine a dialogue shot between parents with said interaction? You could have the mother animal trying to show something to the father but the kids are on top of her head, crawling over her face while she tries to say something. You're combining performance, animalistic behavior and interaction, which would make for a very impressive and entertaining shot.

Any type of fighting is going to have interactions between the creatures. But don't limit yourself to just punches and kicks or claw swipes. Try to have creatures tackling each other, hanging onto each other, ripping apart limbs, etc. These type of interactions are much more complex and less clean. A punch is fairly clean due to minimal contact time. But a smaller creature jumping on top of a bigger creature and trying to claw the bigger creature's eyes out is going

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to necessitate a lot more contact time and the complexity of the interaction is going to increase by a lot.

You can also combine creatures with humans. Let's say a human character has a pet lizard or rat. The creature can be moving over the human's shoulder down the arm onto a table. The examples are limitless!

All in all it is only in your best interest to learn creature animation. Your demo reel will be more varied, which in turn will set yourself apart from the competition and therefore increase your chances of getting noticed by recruiters.

I hope this was helpful!
Happy animating. ❖

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12-Week Courses

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### Creature Animation: Locomotion

Learn the essence of animal and creature locomotion—how a creature runs, walks, senses, stops, and turns. Challenge yourself to animate believable creatures with the help of top creature animators who've worked on ***Guardians of the Galaxy, Game of Thrones***, ***Star Wars***, and more!

Learn More



## WCF01

### Creature Animation: Fight or Flight

Learn how to train your own dragon and animate fight scenes like the pros! This advanced workshop takes your skills to the next level by teaching you how to integrate believable creature animation with live-action background plates. Learn what makes a good action sequence, with tips on planning and pacing physical animation — and learn how to work effectively with live-action footage.

Learn More

# Character Animation Courses

12-Week Courses

## AN01 Animation Basics

In Animation Basics, you'll go beyond software to learn how to realistically convey weight, motion, and follow-through – critical skills on your journey to becoming a character animator. You'll start the course by learning how to animate a bouncing ball and then evolve that bouncing ball through the creation of both "vanilla" and "personality" walk cycles.

## AN02 Body Mechanics

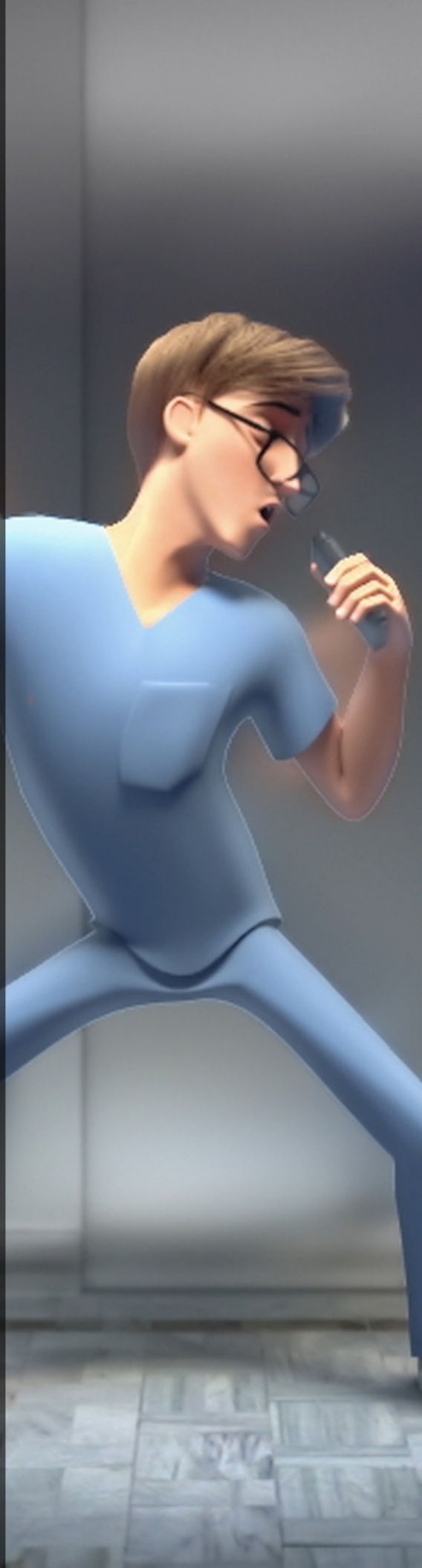
In Body Mechanics, dive deep into the physicality of animating full body walks on both human and animal characters with our Stella and Sloan rigs. Begin by honing your observational skills and understanding of human and animal anatomy. Once you understand the source of realistic motion, you're ready to learn how timing and spacing choices can take your animation from realistic to stylized. Finally, finish class with workflow tips on how to add polish and shine to your animation.

**Prerequisites:** AN01 or Advanced Placement

## AN03 Advanced Body Mechanics

In Advanced Body Mechanics, you'll animate more advanced physicality with your characters. Pick a character and create your own sequence, using cuts to help tell your story. Whether you want to send your character barreling through a wall or jumping out of a plane, Advanced Body Mechanics will teach you the necessary skills to animate physicality and body mechanics believably.

**Prerequisites:** AN02 or Advanced Placement



# Character Animation Courses

12-Week Courses



## AN04 Introduction to Acting

In Introduction to Acting, you tackle two of the most challenging aspects of character animation: pantomime acting and animating dialogue. Through pantomime acting, you'll learn to show the audience the character's emotion without narration or dialogue. Advance to the most exciting concept in character animation: dialogue acting. In this class, you'll learn how to use subtlety and subtext to add complexity and depth to your characters.

**Prerequisites:** Either AN03 or Advanced Placement

## AN05 Advanced Acting

In Advanced Acting, you get your first taste of how to plan and execute your animation in a studio production environment! You'll learn to create shots that cut together correctly, staging your acting in the best way to support the overall story or character arc. Your assignments will focus on two-person dialogue shots and you'll learn how to find the balance of giving each character life without losing the focus on the core beats of your shot.

**Prerequisites:** AN04 or Advanced Placement

## AN06 Polishing and Portfolio

In this course, you'll produce at least 15 seconds of polished animation for your demo reel. Learn the best practices for what to include and what not to include on your demo reel, and get valuable insights into the hiring process at top animation studios.

**Prerequisites: AN05**

# Workshops
6-Week Courses



## WMAYA01
## Maya Workshop: Animation Basics

This is where it all starts! This workshop is designed especially for beginners. Get comfortable with the Autodesk® Maya® user interface and the basic software tools for animators and set yourself up for success in our Character Animation Courses!

## WTOON01
## Cartoony Animation for 3D Animators

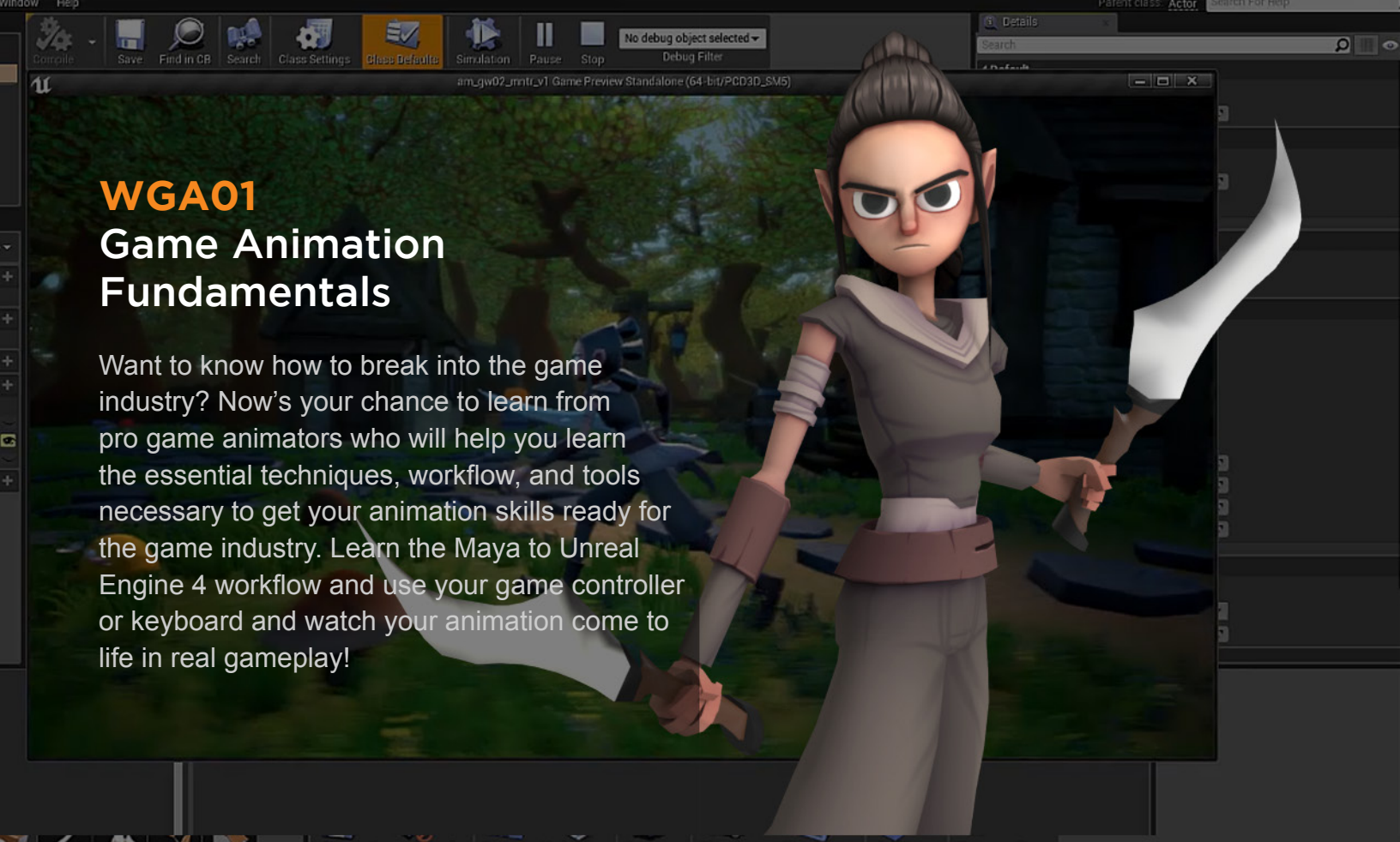
Push your 3D skills by drawing simple 2D animation sketches and learning to exaggerate your animation! You'll start with hand-drawn master studies of great animation to start learning effective cartoony techniques. You'll end up creating a simple cartoony animation following the traditional workflow and then re-creating that animation and workflow on a 3D character.





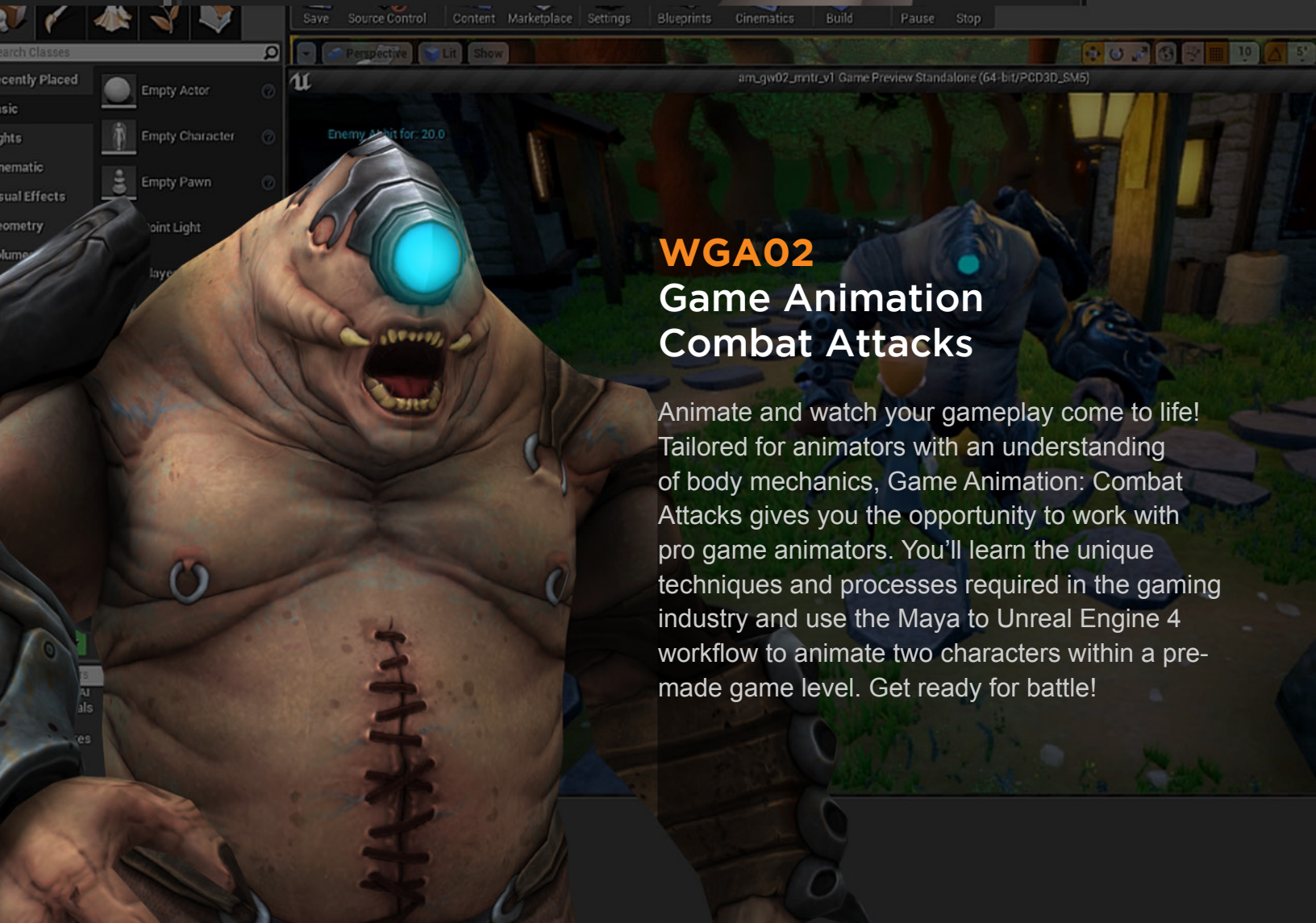
## WSBOARD01
## Storyboarding Fundamentals

Round out your animation skills by learning the foundation for staging, clarity, and emotion for visual storytelling! Learn why "Story is King" in Storyboarding Fundamentals with Mike Kunkel, who has pitched stories for Walt Disney Studios and Nickelodeon. Create your own simple short story and board it to completion.



## WGA01
# Game Animation Fundamentals

Want to know how to break into the game industry? Now's your chance to learn from pro game animators who will help you learn the essential techniques, workflow, and tools necessary to get your animation skills ready for the game industry. Learn the Maya to Unreal Engine 4 workflow and use your game controller or keyboard and watch your animation come to life in real gameplay!



## WGA02
# Game Animation Combat Attacks

Animate and watch your gameplay come to life! Tailored for animators with an understanding of body mechanics, Game Animation: Combat Attacks gives you the opportunity to work with pro game animators. You'll learn the unique techniques and processes required in the gaming industry and use the Maya to Unreal Engine 4 workflow to animate two characters within a pre-made game level. Get ready for battle!

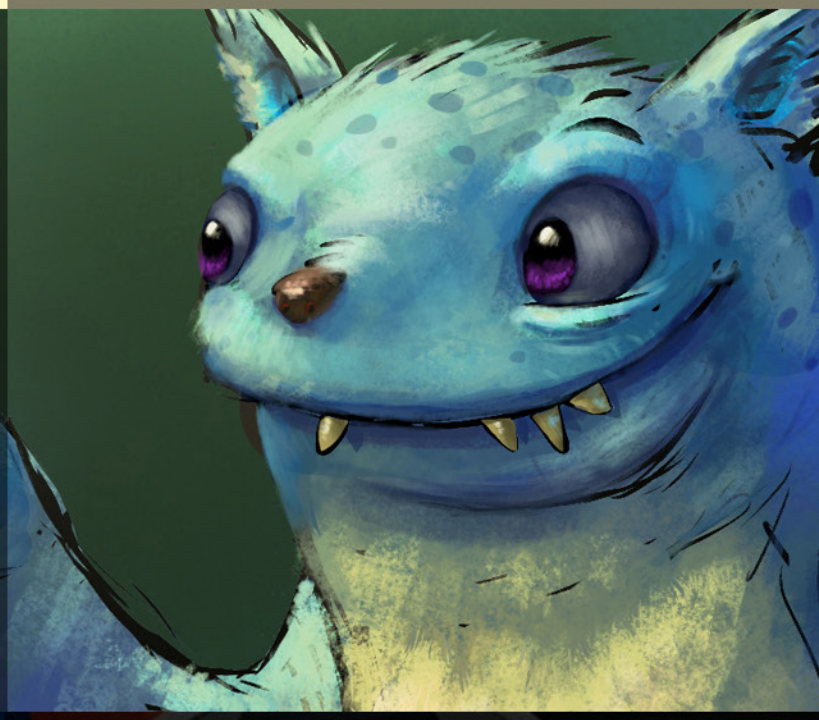


## WVISDEV01
## Visual Development: Principles of Design

Vis Dev Artists—also called Concept Artists—determine the tone and mood for all the characters and environments in a film, TV show, or game. Visual Development Artists have a huge impact across the entire entertainment industry, from animation, to live-action films, to video games, and beyond! In this workshop you'll get started with the basics.

## WDPAINT01
## Introduction to Digital Painting

The character, creature, environment, and background designs that determine the look and feel of your favorite movies, TV shows, and games all started with a painting! Learn the basics of what makes a successful painting and how to apply these skills to your own career path. Storytelling is essential in any visual medium, and you'll learn to use your digital paint brush to share your own characters and stories.





## WPREVIS01
## Previsualizaton Basics for Animators

Previs Artist starts with rough building blocks—just the storyboards or script—which they interpret into a 3D space. In this workshop, you'll learn how animation and camera work are used to help take a project all the way from script to screen! You'll also end up with 15–30 seconds of animation for your demo reel.



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