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Industry insider
Brent Zorich
Character technical director, Lucasfilm

Each issue, **3D Artist** finds out how the top people in the 3D industry got their jobs and what you need to know to get a foot in the door

About the insider

Job Character technical director/lead rigger

Education Master's of Fine Art at ACCAD at The Ohio State University

Company website www.lucasfilm.com

Personal website www.brentzorich.com

Biography Prior to immersing myself in the animation industry, I had worked for the top two architectural firms in the world. I pride myself on trying to be on a team that does the best work, no matter what project. I push technology as far as I can on whatever team I am affiliated with

There are few people in the 3D industry who can claim to have worked on bestselling EA games titles one year and hung out at Skywalker Ranch with Lucasfilm the next, but Brent Zorich is a man who can. Zorich was part of a steering committee meeting for Lucasfilm on film/game convergence. In addition, he was lead rigger on *The Force Unleashed: Ultimate Sith Edition.* On this title, he was working in the LucasArts division, looking at pipeline and storage optimisation and lead rigging on such characters as Jabba the Hutt and Boba Fett. Zorich was also dealing with convergence on all divisions from Lucasfilm to LucasArts, Lucasfilm Animation, Industrial Light & Magic and Lucasfilm Animation Singapore.

3D Artist: *What did this role of working on convergence mean in practice?*

Brent Zorich: As a part of the senior staff, I wrote proposals to help set the direction for Lucasfilm Ltd as a company. In Singapore, not only was I part of research and development prior to my promotion and relocation to the home office in San Francisco, I

also worked on colour correction and compositing for *Star Wars: The Clone Wars.*

3DA: *How did you get this job?*

BZ: I applied online and was hired after Lucasfilm Animation Singapore saw the great work I did on EA Sports' football franchise.

3DA: *What kind of course did you do at university, or training did you do?*

BZ: At ACCAD at the Ohio State University, I did extensive research on the following topics: VRML; procedural animation; Pixar's RenderMan; motion capture. I also researched Wayfinding in real-time simulation (the subject analysed and improved upon was the game *Spider-Man The Movie*).

First of all, the Wayfinding tool was created out of VRML and theories worked on with an eminent scholar. I also studied the enhancement of realism in computer animation through the incorporation of biomechanics and fatigue (the subject analysed was *Shrek*). Next, I looked at rigging of prehistoric animals with my project-based thesis *Mystery Dinosaur* work. Finally, I looked at creatures evolving based on the ecosystem around them. Classes were also taken in digital still-life lighting and theatre lighting.

3DA: *For today's generation of students, what is the kind of educational grounding they should be looking to undertake to get a first job as a character animator, or is the entry level a less specific role?*

BZ: This is the way that I do it. I have a television next to my monitor. I watch *Harry Potter and the Prisoner of Azkaban* (the Buckbeak scene). If I am embarrassed to look at what is on my monitor then I'm not done, plain and simple. I am my own toughest critic and I have zero tolerance.

3DA: *In your role as associate technical artist or lead rigger at EA Sports, what kind of work did that entail?*

BZ: I needed a complete understanding of physiology of humans built for strength and speed. Because I was an athletic trainer who trained football players, it came to me naturally. I know how a football player flexes, I know how they run and sprint and I know how they get prepared for collision. Often, because I have a football player's body, I would go into the washroom at EA where there was a mirror, take off my shirt and flex both my traps and my arms to see the proper deformation. This is how I got into character and what made it so easy is that the character I was getting into was myself!

3DA: *Is there much of a culture or professional working practice difference between working for someone like EA and a company like Lucasfilm?*

BZ: You are who your team is. Lucasfilm, as a company, is a natural fit for me. We both have zero tolerance when it comes to the quality of our work. We push the absolute limitation of technology in every way, shape and form. Because we are not on yearly titles, we have the ability to push back a launch date to guarantee that we are doing our best to break new ground.

3DA: *What software packages and tools have you used for rigging and animation?*

BZ: I use Maya, the proprietary software to Industrial Light & Magic, and After Effects and HyperCam for documentation.

3DA: *Do you think there is a shortage of skilled digital artists doing animation and did you find it difficult getting into the industry?*

BZ: My best advice to any student is try to do an internship in a studio. Do not rush to get out of school; stay in and develop your craft. Finally, do the Buckbeak test as I mentioned above.

3DA: *What are the key skills required to work as a character animator or character rigger?*

BZ: Observation, patience and the goal to push technology. Everything you do, imagine you have to present it to George Lucas. Then you will work harder and will expect the absolute best from yourself and your team.

3DA: *If there was one feature missing from current software apps that you would like to see implemented to help with any aspect of CG animation, what would it be?*

BZ: I saw a demo from a company where you can actually draw arcs of motion on a Wacom tablet and the object will have an animation path.

3DA: *Professionally, what's the most satisfying project you've worked on and why?*

BZ: Seeing my name at the end credits of *Star Wars: The Force Unleashed, Ultimate Sith Edition* makes me incredibly proud. I saw the first *Star Wars* film when I was three in 1977. It motivated my whole career. To see my name in a *Star Wars* product gave me a sense of satisfaction.

3DA: *What would be your dream project to work on?*

BZ: One that continues to push film/game convergence on every level. The ultimate goal for me would be to have an engine that supports a controlled character and the user cannot distinguish between real-time and render.

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Ⓑ Brent at Lucasfilm Animation
Ⓒ Character rigging on SW Force Unleashed
Ⓓ NCAA college football from EA

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Ⓘ Tiger Woods PGA Tour 09
Ⓙ Character work on NFL Tour
Ⓚ Indianna Jones and the Staff of Kings
Ⓛ Artwork from SW: TFU Ultimate Sith edition
Ⓜ College Hoops 2K7
Ⓝ The Ultimate Edition in full

3D Artist Questions & answers

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Auto rigging with Smart Skinner

> How can I rig and skin a character more efficiently to save billable hours - typically days or weeks?

This tutorial is a breakdown of how the Smart Skinner is used in the production environment to save days, if not weeks, on the rigging and skinning process of a character. This step-by-step process goes over the basics of the software and will rig and skin a character of a deer in a matter of minutes. When I worked in production for the biggest companies on the planet, it would not be uncommon that from a billable standpoint, a development director might give me two weeks to start, execute, and complete a rigged character. This caused headaches in the production setting as often I was repeating the same task on different proportions without an effective way of cutting down hours. At Lucasfilm, I was looking through the assets of the main characters such as

Ahsoka, Jango Fett and General Grievous extracting their key attributes and incorporating them into a super rig that could be benchmarked for the company. At EA Sports in the late 2000s I designed the rigging system used for Central Football for titles such as *Madden NFL* and *NCAA*. This Smart Skinner software I have written is a culmination of techniques from these top companies incorporated into a tool that is affordable and easy to use. The character will be completed through a process of firstly executing a sketch skeleton to obtain proper proportion. Then, the character will be blocked out within the mesh to ensure the joint positions are in the correct spot. The Smart Skinner will create the leaf helper twist joints to assist with the proper deformation required to make the rig

production quality. Then, the animator specifies whether or not he wants the character to be a 'film next-gen character' or a 'mobile character'. From there he will reference in a pipeline that enables auto skinning, transferring the skinning weights, unreference the pipeline skinning file, and making an entire control rig at the push of a button. The end result will deliver a character able to be animated out of the box that is top-of-the-line production quality ready for either film or game.

ESTIMATED TIME TO COMPLETE THE TUTORIAL
20 MINS

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Skinning cleanup on the character

In certain intersections of the character, there will be a need to do skinning cleanup on the joints. The skinner can't predict every deformation. This can be achieved by using the Hammer tool in the skin weighting drop-down in Maya.

rotation down the limbs for proper deformation. The animator can use the white anchor controls to assist in the orientation of the joints. Translate the red crosshairs to the proper position, if desired, to orient the pecs and lats on your character.

04 Delete unwanted joints or simplify for mobile gaming

Use the pink buttons to delete unwanted joints. It might be possible that you do not require pecs, lats, hamstrings, or biceps – use these buttons only to delete the joints and simplify down to 'mobile' if necessary.

01 Execute Scale Node and sketch skeleton

Push the button to activate the Scale Node. This will set the overall scale of the rig. Then hit button 2 to generate the sketch skeleton that is already in a base proportion. The animator needs to translate the root of their mesh to the O O O world space coordinate. The root of the sketch skeleton is locked.

02 Block out proportions of the skeleton

By using the open channels, and open channels only, begin to sketch out the proper proportion of the skeleton to the character. Locked are not to be unlocked, this will maintain the proper joint orientation and guarantee that your IK will be set up properly in Step 6. You can also mirror your skeleton for symmetry. Once you have the proportion you want, hit button 4 to lock the sketch skeleton into place. That will zero out your joints in your sketch skeleton.

03 Create leaf joints for deformation and counter rotation

Hit button 5 to execute the 'leaf helper' joints. These joints will assist in the counter

05 Reference in skinning pipeline and transfer weights

Select whether or not you have a 'mobile character' or a 'film next-gen character' (note for the quad you will pick whether your character is built like a cat or a horse) and hit button 8A to reference in the pipeline file. Scale the yellow controls so the reference mesh encompasses the character mesh. Hit 8B to transfer the skin weights. Your skinning should be near completed. Hit 8C to unreference the reference file. You now have a clean scene with weighting that is 90 to 95 per cent complete. Do any cleanup skinning at this point.

06 Create control rig and facial GUI

Now that you have a skinned file, hit button 9 to generate the entire control rig. Your rig is complete. The rigging process is a three-joint chain rig: a control rig driving an animation skeleton that drives a deformation skeleton. In regards to complexity, the control rig is at the level of a major motion picture studio. Hit button 10 to generate your facial GUI that can be used with blendShapes in Maya. Once you've done this, you're ready to animate!

Sketches of Brent Zorich

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CLOTHING COMES IN A VARIETY OF SIZES AND COLORS

THE DESIGNS ON THE T-SHIRTS ARE QUICK CONCEPT SKETCHES THAT, FOR EXAMPLE, IN A CRITIQUE SESSION AT A STUDIO LIKE ILM, WOULD ESTABLISH A ROUGH FORM THAT WOULD BE BROUGHT INTO A SCULPTING SOFTWARE, LIKE MUDBOX, TO ADD A Z-AXIS (DEPTH), AND THEN INTO MAYA TO ADD PLANES TO FINALIZE STRUCTURE. THE WHOLE PROCESS FROM FIRST INCEPTION WITH IPAD AND PEN, TO BEING PREPARED TO SHOW GEORGE LUCAS FOR REVIEW, SHOULD TAKE NO MORE THAN FIVE HOURS. THE SKETCHES ESTABLISH QUICK FORM IN A PROCESS THAT IS MORE "SCULPTURAL" AS OPPOSED TO ESTABLISHING A BUILDING WORKFLOW PROGRAM THAT WOULD ADHERE TOWARDS GEORGE LUCAS' THREE SECOND RULE AS A DESIGN PROBLEM AS APPLIES TO FILM AND GAME. WAYFINDING ASPECTS THAT WOULD BE INCORPORATED INTO THESE SHAPES FOR A VIDEO GAME LEVEL ARE NOT ESTABLISHED IN THIS PROCEDURE. THIS PROCESS I HOPE TO IMPLEMENT IN THE CLASSROOM AS A PROFESSOR, PART TIME, AT HARVARD ONE SEMESTER EVERY THREE YEARS IN THE DIGITAL DESIGN DEPARTMENT. IT IS MY HOPE THAT THESE DESIGNS RESONATE WITHIN EACH PERSON AND THEY CAN EXPRESS THEMSELVES THROUGH MY WORK.

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Press Release

Tech entrepreneur Brent Zorich unveils exciting apparel company shaped by experience at Lucasfilm

Published: Aug. 31, 2021 at 9:12 a.m. ET

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Aug 31, 2021 (AB Digital via COMTEX) -- "Sketches of Brent Zorich" is an apparel company created to share the designs and artwork of tech entrepreneur, Brent J. Zorich, who has worked at the largest architecture, animation, visual effects, and video game companies worldwide. Brent is a globally published tech entrepreneur and venture capital presenter, who has lived in both North America and Asia, and named as 'One of the Top 100 Global People in Tech and Innovation' by the Intercon Conference sponsored by Facebook and Amazon.

Zorich licensed auto rigging software that he authored that completes 80 hours of rigging work in 15 minutes to 250 universities on six continents. His LLC, BZP Pro, was under acquisition review five times with three separate Fortune 500 companies whose deals were brokered by a Goldman Sachs alum of Harvard. After he raised investment money from a banking alum of Harvard and Yale, he had booths at Siggraph and GDC where he got endorsed for his technology by The Siggraph Chair publicly as 'mind-blowing', and that work was featured on the cover of Worldwide Magazine, 3D Artist Magazine.

THE WALL STREET JOURNAL.

Brent specializes in designing modular rigging engineering systems to automate characters like Buckbeak in 'Harry Potter and the Prisoner of Azkaban'. Zorich did something similar to that previously at Lucasfilm/ LucasArts/ Industrial Light & Magic, where he also frequented The Skywalker Ranch, was The Best Practices Review Committee selected by the former CTO of Peter Jackson's Weta Digital (The Lord of the Rings), an executive trainee, worked on the intellectual property of Star Wars: in particular the rigs of Boba Fett, Jabba the Hutt, Ultimate Evil (The cover character of Star Wars The Force Unleashed), and converging ILM's Jango Fett with Lucasfilm Animation Singapore's Ahsoka Tano on the Xbox, which was shown directly to George Lucas in the late 2000s. Other Lucasfilm IP included Steven Spielberg (Indiana Jones and The Staff of Kings), Michael Bay (Transformers Revenge Of The Fallen), and JK Rowling (Harry Potter and The Half-Blood Prince).

EA Sports (where he redesigned the rigging system on their top title, Madden NFL, and NCAA Football, as well as attending global rigging research and development on Fifa, Facebreaker, NHL, EA Harry Potter, and Tiger Woods PGA) and Take Two Interactive (NBA 2K with rigging tests done on Shaquille O'Neal motions) were also previous employers. At ACCAD (where CGI was invented in the 1960s) at The Ohio State University, for his master's degree, he was in The DreamWorks Outreach Program focusing studies in technical animation while being trained from supervisors on such films as Shrek, Madagascar, Finding Nemo, Shark Tale, and Spider-Man 2, with attending a lecture session by the "K" in DreamWorks SKG: Jeffrey Katzenberg. This training at ACCAD was applied to a one hour long Jurassic Park oriented dinosaur special that aired on The Discovery Channel where he worked in coordination with paleontologists from The Burpee Museum in Rockford, Illinois, who worked with Spielberg's dinosaur crew on Jurassic Park.

Zorich's master's thesis focused on auto rigging dinosaurs in the programming language Python. Brent also does concept illustration work (QA on Adobe Photoshop for Adobe's Apple iPad team via illustrations), and was formerly an interior architect for the two largest architectural firms in the world: #1 Gensler and #2 NBBJ with clients such as Adidas, Volkswagen, and The Republic of China. Most recently Brent was subcontracted rigging prototyping work from Sony Pictures involving The Marvel Cinematic Universe and Walt Disney Feature Animation, while taking continuing studies at Stanford University in linear algebra and engineering. His undergrad degree from Ohio State was in industrial design where he focused on independent projects for Nike and Reebok. Brent looks forward to sharing his art and designs with the whole planet. Brent's eventual goal is to become a Chief Visual Officer at a major VFX, video game, or animation studio.

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