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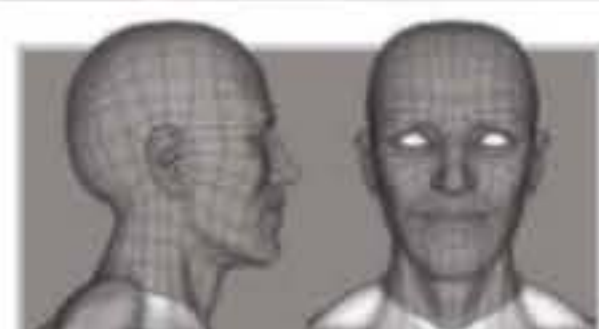Framestore and Digital Domain reveal how to convincingly replicate even the most famous of faces

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> ❝ I always intended to animate this figure. A rough script was shaping in my head while I was working on other projects ❞

André Kutscherauer brings his light-bulb character to life in a short film that will brighten up your day. Page 108

'Selfillumination'
AK3D
André Kutscherauer sheds light on his animation process in this charming short film

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Project Focus
'Selfillumination'

André Kutscherauer sheds light on the animation process behind his renowned bulb-headed character

Project 'Selfillumination'
Description Based on André Kutscherauer's impressive 'Selfillumination' series from over the years, this animated version sees the bulb-headed character search for ways to light up his noggin, without being constrained by a restrictive cable. When he finally finds a way he can't help but tap dance with joy.
Company AK3D
Country Germany
Bio André Kutscherauer is a 3D artist based in Munich, Germany. He has visualised thousands of designs for a major household appliance manufacturer and creates 3D animations for marketing and advertising. In addition to his main activities, he works on free art projects, is a published author and is a freelance lecturer at universities.
www.ak3d.de

The artist
André Kutscherauer
Artist/animator

You may recognise the light-bulb character featured in this animation, as he's been knocking around in the CG community for quite some time now. Created by German artist André Kutscherauer, the bulb-headed character started out life as a demonstration of his maker's skills with 3ds Max and mental ray. However, the series also presents a metaphor for self-fulfilment, restriction and the dark side of success.

Now, many years after first envisioning the character, Kutscherauer has returned to his much-loved 'Selfillumination' series, but this time has endowed the character with motion in a splendid animated short. "The film tells the story of how the light-bulb guy is still searching for ways to keep shining, without being restricted," says Kutscherauer. "He finally finds a compromise between shining and freedom. Like my previous works, this is again a mirror of my current situation."

In order to properly animate his long-running character, Kutscherauer turned to the powerful 3ds Max Character Animation Toolkit (CAT). "This was the key tool for me to realise the short," says Kutscherauer. "What impressed me with CAT was its complete procedural workflow. As all motions can be layered, I was able to build up a workflow almost like in Photoshop.

"At the bottom I had a layer called 'Transportation' that dealt with all the work cycles automatically," continues Kutscherauer. "On the second layer was the animation of the upper body. Besides that I had some different layers for Forward Kinetic and Inverse Kinetic animation-blending, and so on. As you can easily blend these motion layers with a simple number it was really fun to animate the whole thing."

The animation was produced as one shot, meaning CAT had to work with a lot of different requirements. He explains: "When the figure picked up the plug, the arms were bound to the plug and the FK had to switch to an IK. If the figure started to cycle on a bike, the feet had to be controlled by the pedals. All of these needs were really challenging for me to realise as it was my first character animation, but thankfully CAT is a really reliable tool."

Plugging in
Kutscherauer lists the many useful plug-ins that helped light up 'Selfillumination'

"Personal projects such as this are a playground for me to try out techniques I would never usually use in my daily business, so I applied a lot of plug-ins for this animation. For the 3D elements I made use of Vue xStream, StereoCam Modifier, BetterWind Modifier, Particle Flow Tools, FumeFX, Frost, Krakatoa and nPower Translators. When working on the 2D elements I used ReelSmart MB, Particular, Magic Bullet Looks and a lot of scripts for specific tasks. Without these plug-ins, a lot of the scenes you see would not have been possible."

❝ I always intended to animate this figure. A rough script was shaping in my head while I was working on other projects ❞ **André Kutscherauer**

Ⓐ Kutscherauer has been working with this series for many years now, with each image depicting something metaphorical about his own career. In this latest project he decided to not only animate the character, but also present him in stereo

Ⓑ The fluid change of lighting in the short proved a challenge. While dancing, the bulb-headed character transitions from indoor studio lighting to outside natural lighting. Kutscherauer achieved this change through the careful use of layers

Ⓒ The natural environments encountered in the short were created using E-on Software's Vue xStream. The scene is based on a real area called Sylvensteinspeicher, which is located near Kutscherauer's home in Munich, Germany

Ⓓ Kutscherauer found the 3ds Max Character Animation Toolkit extremely useful on this project. Its ability to layer motions in a workflow similar to Photoshop was particularly handy. "I was able to realise all scenes in the most intuitive way I could imagine," he says
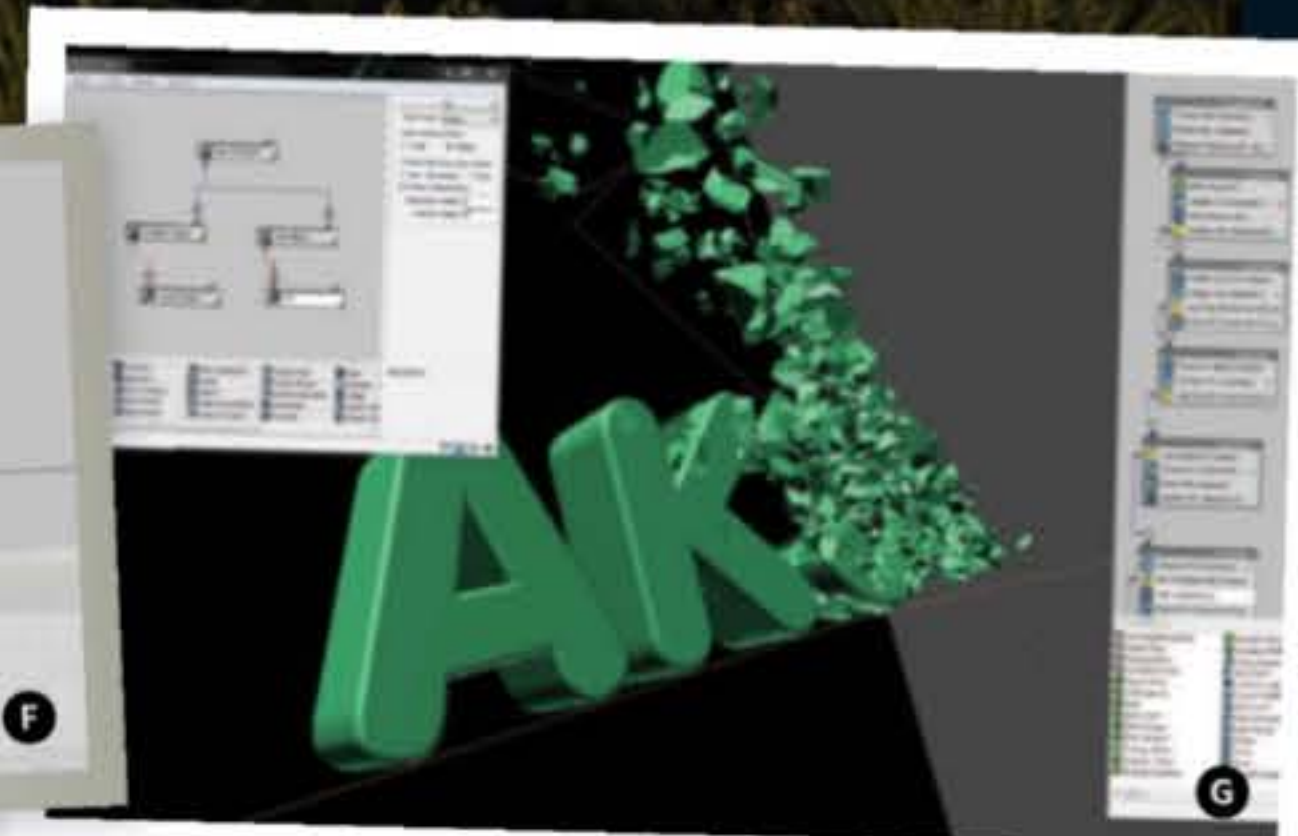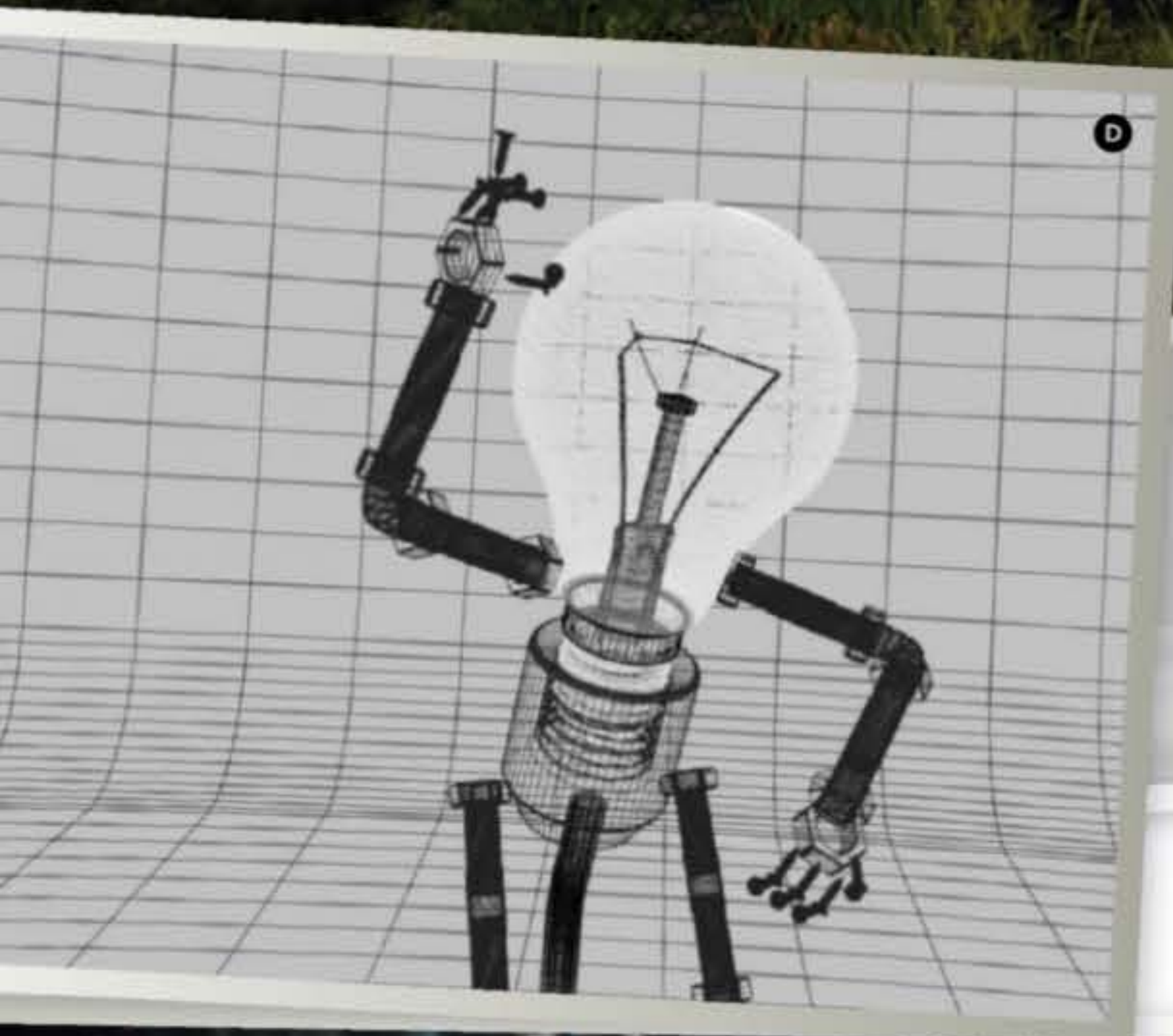
Kutscherauer didn't just stick to traditional CG animation, though. He also delved into the world of mocap. "For the tap dance I got an incredible offer from Critical Moves to mocap a custom sequence of my choice," he tells us. "I always had a scene in mind where the figure gets his power from a solar umbrella, so I chose to have him tap dance to *I'm Singing In The Rain*.

"It was a challenge because of the complex dance and the proportions of the light-bulb guy – he has a really big head and no neck," continues Kutscherauer. "The dancer had to move the umbrella in an uncommon fashion so as not to collide with the glass bulb of the figure. Critical Moves found someone who was able to dance this complete sequence and then did a complex retargeting task to get the motion to the final figure. They even recorded the tap sounds on a wooden ground!"

The result is a charming short that breathes even more life into a character already full of CG-driven personality. You can watch it in full – in both 2D and stereoscopic 3D – at www.ak3d.de.

E The decision to add motion blur to the short increased Kutscherauer's render time by about a month. However, he was adamant that only fully rendered 3D motion blur would have the quality he aimed for. As he tells us: "Patience is a virtue!"

F Given that he works in product design, the final look of the project was key to Kutscherauer. When it comes to rendering and lighting he has a simple rule: "Do not fake anything! If it's too dark, don't fix it in post, but replace the light correctly"

G The film's opening logo is impressive, with Kutscherauer using tools such as Krakatoa and FumeFX to achieve a stunning effect that features 50 million simulated particles. It was the first time he'd attempted something like this