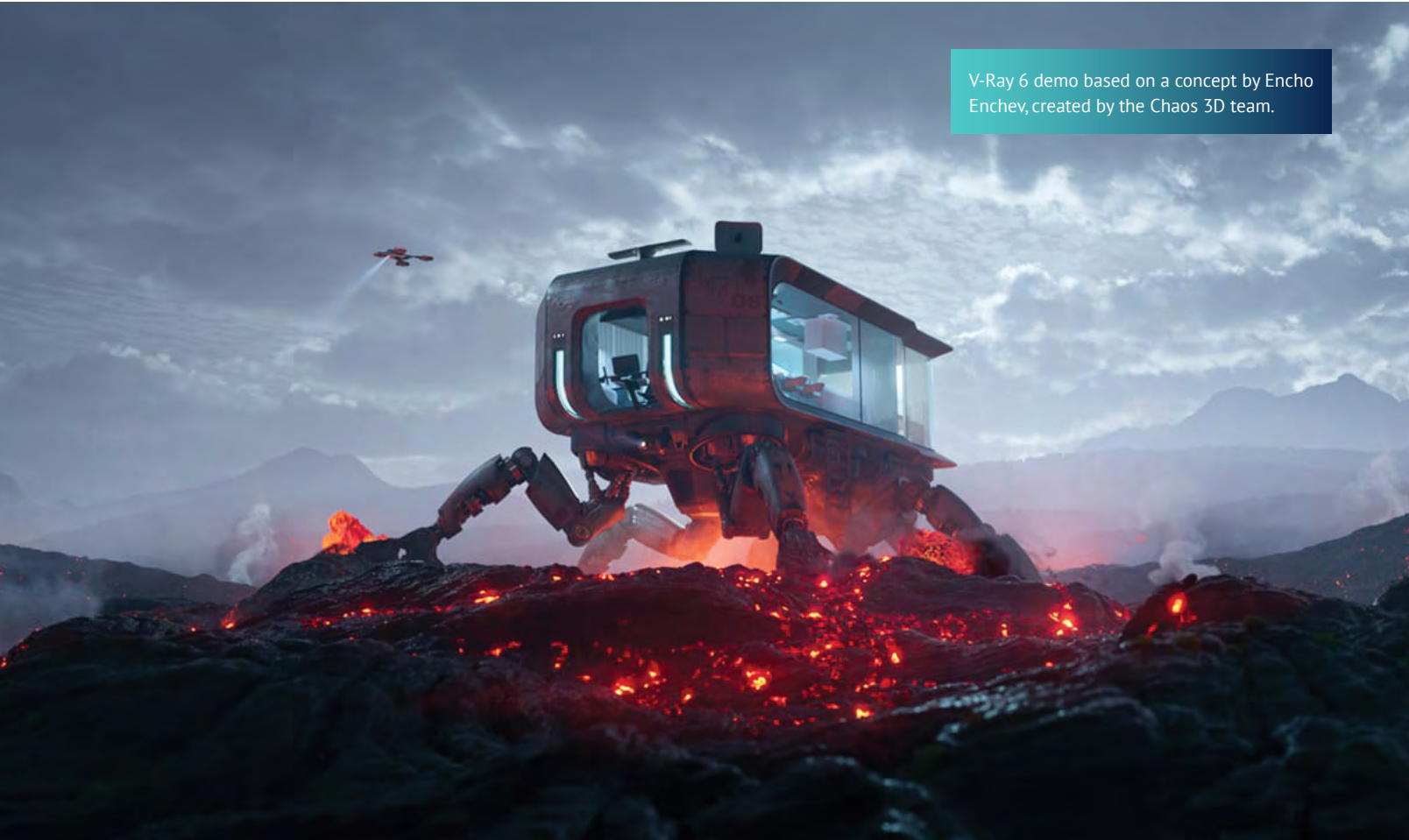# Tech Reviews

- By Todd Sheridan Perry -

V-Ray 6 demo based on a concept by Encho Enchev, created by the Chaos 3D team.

Chaos Phoenix 5

Along with V-Ray 6, this summer saw the release of Phoenix 5, which is the update to the Chaos fluid simulator (which includes water, fire, smoke, etc.). Phoenix already has established itself as an easy-to-use fluid simulator, with comparatively straightforward controls. This means you are up and running quickly and have time to tweak and adjust settings. In 5.0, things have been made easier by adding in four new presets: Stormy Sea, Jet Engine, Ice Cubes and Speedboat. What you need to know is that with a click, you have the voxel volume and pertinent control tools to get you going. I know I've needed each of these setup multiple times in my career. So, having these presets at your fingertips is really handy.

A few of these setups utilize some new tools in Phoenix 5. Speed Boat, for instance, uses both the Thruster and Axis Lock forces. In days of yore, we would animate a boat moving through the water and then simulate the wake, splashes and foam and such. The downside of that was that while the boat pushes the water, the water pushes the boat — and you don't get that interaction via animation. The Thruster Force "pushes" the boat (or whatever object you are using) through the water and the boat will gain nuance in its motion based on the structure of the water beneath it. But you don't want the boat bouncing all over the place, so the Axis Lock limits the amount of rotation and translation the boat can move in any particular direction.

This interaction between objects and fluid is a common theme. More controls have been added to the active bodies (the objects) to dictate how the bodies will behave. Do they emit foam, retain fluids, can they attract each other or react to the side of the fluid volume, etc?

Phoenix 5 also brings command line standalone simulations, essentially removing the overhead of running Max or Maya. You can export a Phoenix scene — which is an ASCII file, so it can be edited after the fact, and then run the simulation. As of mid-August, there were some limitations with object animations and a few other things in standalone mode. But, it sounds like the big brains at Chaos are hard at work expanding the functionality.

Additional features include better foam generation for ocean sims, a voxel shader that allow rendering of solids, smoke and fire within the same shader, cryptomatte and multimatte support, exporting simulations to PRT files, and a node-based interface for SimScenes.
Website: chaos.com
Price: $70/month, $380/year

Chaos V-Ray 6

Chaos also released V-Ray 6 for both Max and Maya this past summer. Usually at this point in a

software's development cycle we are seeing incremental steps forward, often to make things faster and more efficient under the hood, which is definitely important. But V-Ray 6 has some additions that while seemingly simple at first blush, are really potentially powerful.

The finite dome light is pretty sweet, and solves problems that many of us just didn't see as a problem — until they became one! Dome light is a way to get image-based lighting and reflections into your 3D scene using an HDR. But originally this light would be infinitely huge — and the world, in fact, is not. For stills, it seems to work fine — especially if you are incorporating that HDR as the background itself. Yet, when you start moving the camera around the scene, the perspective will break. By setting the position and scale of your dome light, your scene has a better relationship to your CG. The ground is the ground, your background is closer and everything works together.

Clouds have been added to work with the Sky/Sun systems. So, now, when you change your sun position on the horizon and those atmosphere algorithms kick in, your clouds behave appropriately. There are lots of parameters to fiddle with to get the cloud cover you want.

Chaos Scatter, which used to be a separate thing, is now built into V-Ray. All of the goodness of scattering objects of proxies, with controls of variation in scale, rotation, transformation to give a sense of chaos (no pun). There's control over scattering on the surface on sloped terrain, or elevation differences or driven by maps. It's incredibly powerful — and now part of V-Ray itself.

EnMesh is a cool tool with which you can procedurally replace a simpler surface with incredibly complex, repeatable geo that calculates at render time. I guess you could think of it as a variant of Scatter — taking a source mesh and propagating over a surface. There is a great example creating chainmail using a mesh of five chain links and then spreading them across a piece of simulated cloth.

Another really clever tool is Decal Displacement. The idea of a decal is placing an image onto a surface, like a sticker. A clearer example would be crawling ivy on a building. Without displacement, the "decal" would look like a painting of ivy on the building, but with displacement, the image would cast shadows on the surface below — providing depth without the cost of adding geometry of ivy vines and leaves.

These are the primary cool features, but there are more benefits in sub-surface scattering and energy conservation. And in Maya, there are some added tools and benefits for those who are migrating to using USD (which you should). Overall, there is quite a bit to take advantage of in this latest release!

Website: vray.com

Price: Commercial - $77.90/month, $466.80/year; Educational - $149/year

Todd Sheridan Perry is a VFX supervisor and digital artist whose credits include The Lord of The Rings: The Two Towers *and* Avengers: Age of Ultron. *You can reach him at todd@teaspoonvfx.com.*

ANIMATION MAGAZINE ™

November 2022

GUILLERMO DEL TORO'S

PINOCCHIO

FROM THE ACADEMY AWARD® WINNING DIRECTOR OF
PAN'S LABYRINTH AND THE SHAPE OF WATER

"It's an illusion that animation is identical to live-action film. **The art of animation is to 'animate,' to breathe life, to give a soul to something that doesn't exist**, that is not alive. We are not registering moments that happen and organizing them into a narrative. We are creating something that, without us, wouldn't exist. **It's a supreme, humbling, moving exercise and close— really close—to pure art."**

GUILLERMO DEL TORO
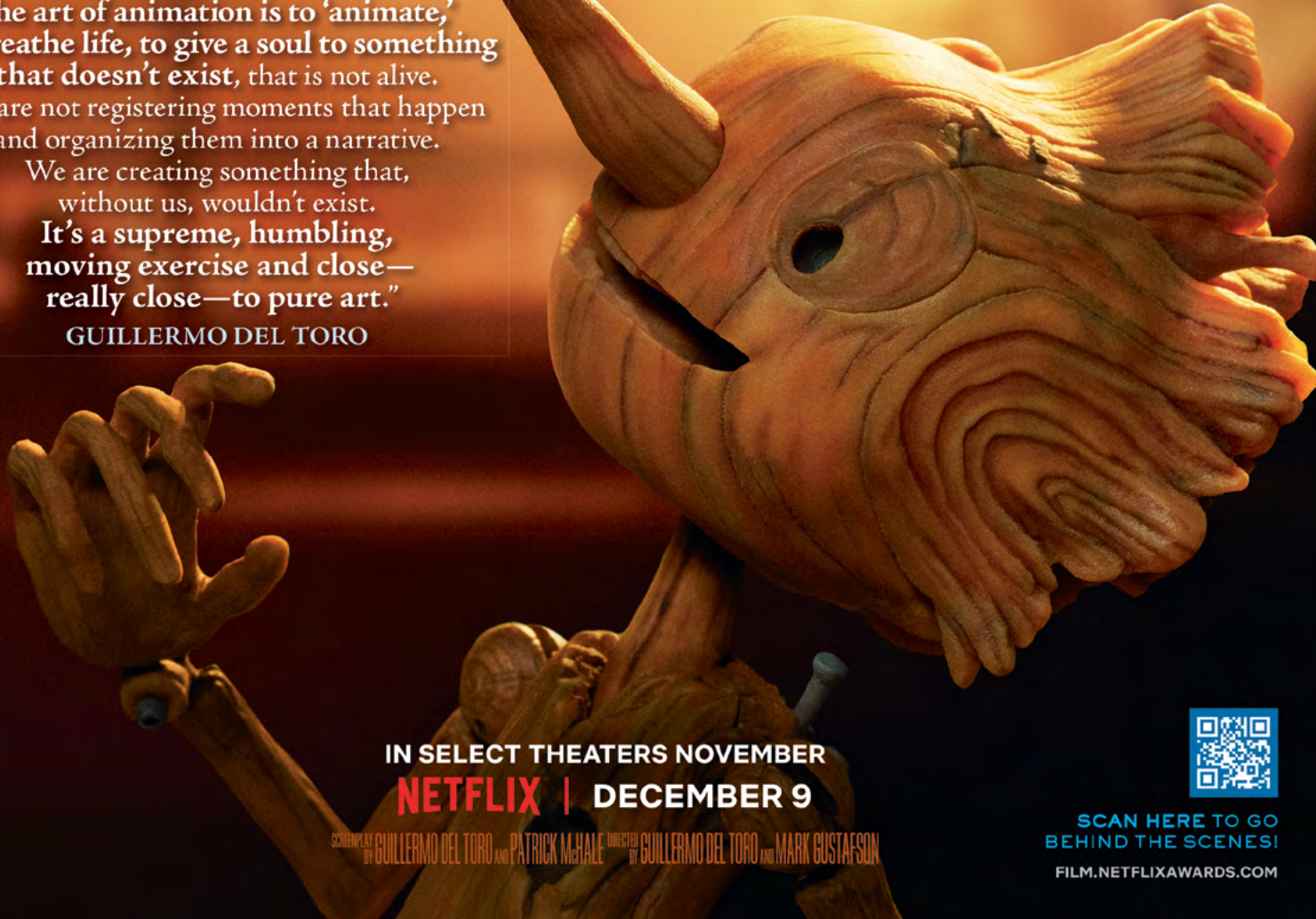
IN SELECT THEATERS NOVEMBER
NETFLIX | DECEMBER 9

SCREENPLAY BY GUILLERMO DEL TORO AND PATRICK McHALE DIRECTED BY GUILLERMO DEL TORO AND MARK GUSTAFSON

SCAN HERE TO GO
BEHIND THE SCENES!

FILM.NETFLIXAWARDS.COM