V-RAY MAG

SIGGRAPH 2013
ISSUE

future's features

Vladimir Koylazov Talks V-Ray 3.0

featuring

Marek Denko, Toni Bratincevic, Pixelhunters, Miguel Ortega, Factory Fifteen, Blur, Jose Manuel Linares López

Rocket science.
A child's play. From a back-
yard rooftop, reaching above
clouds. Future. Beyond boundaries.
This is what came out to our minds when we first gazed at Marek Denko's latest image 'Rooftops, Rockets and Adventures Beyond'. And we embraced it as one of the most vivid illustrations of our philosophy - ARTWORKFLOW. Marek kindly granted us the right to use his masterpiece to spread our message. For which we warmly thank him and all the artists who continue to push the boundaries of what is possible. We thank you for your hard work and creativity, and we thank you for continuing to push our own limits. Innovation will always be on our software roadmap, and V-Ray is dedicated to you.

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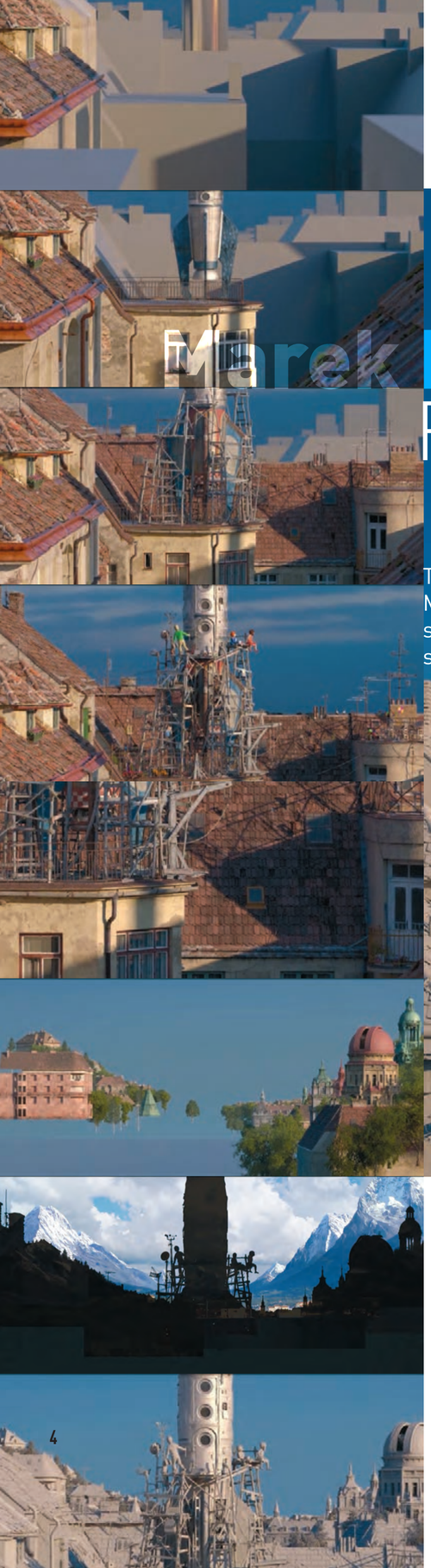
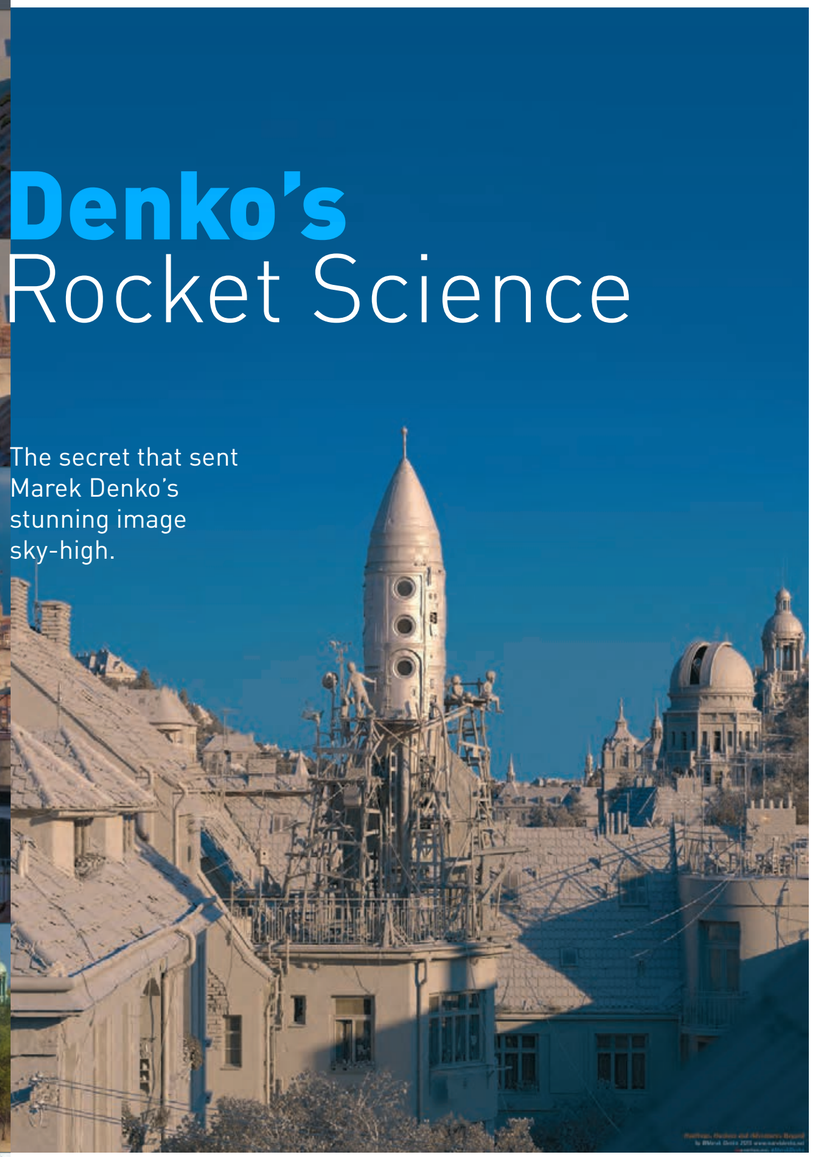


Images © Marek Denko / www.marekdenko.net

Marek Denko's Rocket Science

The secret that sent Marek Denko's stunning image sky-high.



HOW DID YOU COME UP WITH THE IDEA OF 'ROOFTOPS, ROCKETS AND ADVENTURES BEYOND'?
I'm a creative person and besides CG I'm a big fan of universe exploration, astronomy and theoretical physics. For a long time I wanted to create a poster for my kids. I wanted to create something dreamy and fascinating full of little things to discover...something that could possibly push their pure minds to invent, build and explore in the future.

HOW LONG DID IT TAKE YOU TO COMPLETE THIS IMAGE? WHAT WERE THE MOST CHALLENGING ASPECTS OF THIS PROJECT?
In total, it took me several months of focused work. With long breaks and work on different projects it's been around 2.5 years since the beginning. There wasn't any major technical challenge. I spent most of the time searching for nice references and figuring out where to place them, which elements to add next and so on. What I found pretty hard was to let go and release the image. It turned out to be quite a long relationship.

SHARE SOME MORE DETAILS ABOUT THE MAKING OF THIS IMAGE.
I've managed to gather around 800 visual reference files during the process. From early stages I thought it would be nice if I did a "Making of" animation. I've rendered tons of renders just to have a new incremental frame for the time lapse animation. I ended up with over 300 test renders. After a while, the scene became heavy so I decided to split it in two: foreground roofs and rockets, background buildings and trees.

For lighting, as one would expect, for exterior I've used two light sources: spherical HDR image (sky) and directional (sun).

Kids were firstly roughly modeled, roughly rigged, skinned, posed and later on detailed based on the camera angle. Hair and faces were replaced with actual photos of my children taken in similar lighting conditions.

Background elements (buildings, trees) were rendered separately to have better control over the final positions and the influence of atmosphere. It helped a lot in the final stages when I was playing with it in Photoshop.

YOU DEDICATED THIS IMAGE TO YOUR THREE KIDS. A LOT OF LOVE WENT INTO THIS GIFT FOR THEM. WHAT DID THEY SAY WHEN THEY SAW IT?
They've seen it so many times on my screen so they knew about it. About 3 months before it was done my son Adam came to me. He looked at the screen and said: "Are you really still working on this? "What's wrong with it?" But they love it on the wall. They've painted dozens of rocket and roof images as I was working on it.

Marek Denko is a 3D artist from a small town in the Slovak Republic. His love for computer graphics began in early 90's with his Atari 800XL and later on, in 1995, he discovered the magic of 3D graphics with 3d Studio R4. After graduating from the Faculty of Civil Engineering at the Brno University of Technology, he and colleague Peter Sanitra cofounded the studio NOEMOTION in Prague.

> Having 3ds Max without V-Ray would be like having a car without wheels!
>
> Marek Denko

WHY 3D VISUALIZATION?
Since childhood I've loved to draw and paint. Then, miraculously having one of those secondhand computers, which arrived in Eastern Europe, was really something that influenced the rest of my life. Discovering the world of computer graphics was amazing. I started to write code and created my first pixel art on an 8-bit Atari. I started using 3D Studio on my first PC and later moved on to 3ds Max. Despite my successful studies in civil engineering, 3D became my life path. I started my journey as an enthusiastic amateur and eventually became a full-time 3D artist and a studio owner.

WHY V-RAY?
Simply said V-Ray is just truly solid, reliable and stable piece of software. I know it and I know what to expect from it. Having 3ds Max without V-Ray would be like having a car without wheels!

Broad Strokes' Minute Details

Rebuilding Toni Bratincevic's 'Level 10' from the ground up

Level 10 was not easy to reach on Steamtris. It was so hard even for people that played the game for years. Legends were made about some players going that far, there was even a story about a kid that reached Level 10 after playing the game for only few months. Nobody believed in those myths for a long time until one day there was a big announcement in local newspapers that rumors were actually true and that the little boy will actually demonstrate his skills on the square in our town. I still remember that moment, that Saturday, hundreds of people at our local square and him playing that game like nobody before. It was so magical, untrue, it was the moment when I started believing that in order to do big things in life you just need one substance - love for what you do.

YOU'VE SHARED QUITE AN INTRIGUING STORY BEHIND THE FAMED 'LEVEL10' IMAGE, HOW MUCH OF IT IS TRUE?
The story is partially derived from some of my experiences in life. I remember that I've heard a similar story about one guy that used to play Tetris so much that nobody was able to beat him. Even at the highest level he would play with such ease and passion. I've changed that concept a little bit and I've put a dose of my life story in it because I never went to an art university, I've learned everything by myself and still somehow ended up working for dream companies. The main reason for this is that I really loved doing 3D art.

YOUR STILL IMAGES ARE ALWAYS ABUNDANT IN DETAIL AND COMPLEX BACKGROUND OBJECTS. WHERE DO YOU FIND THE INSPIRATION FOR THEM AND HOW DO YOU COMPOSE THEM TO REACH THE FINAL IMAGE?
The strongest point of every image is in its broad strokes. If it is easy to read it from a small thumbnail, then you know it will work as a bigger image. Based on that, I try to get most significant objects and strong composition with the first pass of modeling, texturing and lighting. Once that works perfectly, I go into details, but I am very careful where and how I add details so I don't break the composition established with broad strokes. I collect a lot of references before I start going into details so at that point it's just about extracting small ideas from references and trying to figure out how to modify those and adapt to my scene.

> The strongest point of every image is in its broad strokes. If it is easy to read it from a small thumbnail, then you know it will work as a bigger image.
>
> Toni Bratincevic

'LEVEL 10' IS NOT THE FIRST PROJECT OF YOURS TO MEET CARTOONISH, FAIRYTALE CHARACTERS WITH ULTRA-REALISTIC ENVIRONMENTS. IS THERE A CHALLENGE IN SUCH A 'CLASH OF REALITIES' AND WHAT IS IT?
As long as materials and textures used for a cartoonish character conform to general physical materials of the rest of the environment, it will work fine. I tried to keep a realistic style on everything, but exaggerate some shapes and make them more cartoonish. For me, that clash of styles works perfectly, because the viewer can instantly get used to the realistic environment and at the same time treat the character as part of that environment even if it's not fully realistic.

WHICH PART OF THE WORK ON AN IMAGE YOU CONSIDER OF THE HIGHEST IMPORTANCE FOR THE FINAL APPEAL OF THE IMAGE?
Composition and lighting are always the most important elements of any good render, but it's impossible to get great lighting unless you have good textures and great materials. I do enjoy the lighting and compositing stages the most because I know that at that point I am already done with most of the modeling tasks. However, unless all parts of the process are done properly, the final product will not work as expected. That's why I try to improve my skills in all areas.

WHAT IS THE ROLE OF LIGHT AND TEXTURES IN THE IMAGE STORYTELLING?
Textures are important storytelling elements because they directly translate to human perception. When I am texturing my environments I pay big attention to dirt and how it's collected around and on objects, since this is one of the main factors influencing the realism of images. Once you understand that there is no clean surface in the world, you approach textures and materials in the same way – it's all about imperfections that are not directly visible but they add up to the final impression. For lighting I don't usually go into details and imperfections. I usually keep lights relatively simple and single color but I spend a lot of time tweaking light positions, angles, and intensities to get the correct balance which improves storytelling in image.

'LEVEL 10' HAS QUITE A DARK AND STEAMPUNK FEEL TO IT. WHY DID YOU CHOOSE THIS PARTICULAR DIRECTION?
I chose the Steampunk style because I wanted to experiment and try to design something more interesting compared to the basic "copy-from-reality" technique; it was always my favorite style, although I didn't do many images using it. A couple of years ago I did one steampunk image so when I started working on 'Level 10' I reused some of those elements. Although it's a relatively dark scene, my intention was not to make it dark emotionally. I chose a night scene because of flexibility, it's easier to get focus on the character and there is much more freedom to play with lighting.

> I wanted to experiment and try to design something more interesting compared to the basic "copy-from-reality" technique.
>
> Toni Bratincevic

WHAT WAS THE WORKFLOW YOU APPLIED WHEN WORKING ON 'LEVEL 10'?
As I mentioned, I usually work by making broad strokes, I work by doing fast iterations of combined modeling, texturing and lighting passes, and then after a WIP render and a small paintover, which I do after every render, I go back to modeling and make more iterations gradually increasing the image quality until I am satisfied with the final result. I don't practice a workflow where I try to finish all modeling first because it tends to become very structural, slow, and not very artistic and inspirational. The first thing I usually do in my workflow is to establish the camera view, model basic elements, and do a quick pass of lighting. After that stage it's all about bringing the image to a higher level by detailing and refining textures, improving lighting, models etc.

HOW LONG DID THE PROJECT TAKE? AND HOW LONG DID THE RENDERING TAKE?
I worked on 'Level 10' for a few weeks, maybe around 130-150 hrs in total. Since I reused some elements from an old project I was able to make big progress in the beginning. Render times were around 30 min to 1 hr for 2K WIP renders while final resolution of 4k was rendered in around 5 hrs. I used the shademap feature in Stereoscopic modifier to speed up rendering of DOF, and because of that I probably cut render time by at least 30%.

WHICH FEATURES OF V-RAY DID YOU FIND TO BE PARTICULARLY USEFUL WHEN WORKING ON 'LEVEL 10'?
I love so many features of V-Ray. The physical-based material really helps boost accuracy to a new level and it makes material creation/balancing a very easy process. Lightcache is fantastic for secondary bounces and I love it because in a few seconds I can get an overall feel of how the final image will look. Shademaps are fantastic because I was able to render the image with clean noise-free DOF without significant impact to render time. 2D displacement is still my favorite way of displacing objects in V-Ray because it's very detailed, super fast and easy to setup, and in the end ability to turn objects into lights just by assigning materials is very helpful in my workflow.

WHAT NEW FEATURES WOULD YOU LIKE TO SEE IN THE NEXT BIG V-RAY RELEASE?
I would like to see some integration improvements in shademap caching, it would be great if it's a one-click solution where it keeps pointcloud data in memory instead in file. I think it should work in a similar way to Irradiance caching, where the user decides what to do with cache (save it to disk or memory). I love this feature and I think it has so much potential to speed up renderings with DOF and motion blur and get noise-free images. It looks like V-Ray 3.0 will bring many improvements which I can't wait to try and bring my images to even higher quality.

'Level 10' was made for CGChallenge(10) and was inspired by a Tetris game which Toni used to play a lot as a kid.

Images © Toni Batincevic / www.interstation3d.com

The Fight For Perfection

World, War, Robot: The Beginning of Pixelhunters' Future War Story

an interview with

Iliya Atanasov

Studio Director and Lead Artist, Pixelhunters

The work of artists from all over the world inspired Pixelhunters to start working on their Warrior Mech short movie (official movie title is coming soon). This short movie is about the inner fight inside every human being - the well-known battle between good and evil. Stay tuned for the full release of the project to see the unexpected turn of events...

TELL US A FEW WORDS ABOUT PIXELHUNTERS AND THE PROJECTS YOU ARE INVOLVED IN.

Pixelhunters is working mostly for the game industry, we are producing game cinematics. We also work on commercials, architectural visualizations, corporate films and presentations.

HOW COMMON FOR YOU ARE FEATURE SHORTS SUCH AS 'WARRIOR MECH'?

We are passionate about art and often we are trying to do things for ourselves between the regular projects. This allows us to express different ideas and to test our skills with new tools and software.

Images © Pixelhunters / www.pixelhunters.com

WHAT ARE THE MAIN TYPES OF SOFTWARE YOU USE IN YOUR WORK?
We are a Maya-based studio. We recently changed our rendering engine to V-Ray and we are very happy with the results.

THE SCENES ARE QUITE ABUNDANT IN DETAIL AND ARE ALTOGETHER QUITE COMPLEX AND HEAVY. HOW DO YOU COMPOSE THEM TO REACH THE FINAL IMAGE?
We are very happy with the render elements – they are very easy to set up, and very comfortable for the compositing process. We used reflection, specular, Ao, material ID, render ID, zdepth passes to achieve the result. All the workflow is 32-bit EXR sequences, so we can touch a lot the rendered images.

WHICH V-RAY FEATURES HAVE YOU FOUND TO BE PARTICULARLY USEFUL WHEN WORKING ON THE SHORT?
The rendering of glossy/shiny materials is perfect for a robot/metal armored body. Here we can see a big difference with our previous renderer. Everything looks easier to achieve with V-Ray, so we can spend more time into the art and ideas themselves.

WHAT WAS THE WORKFLOW YOU APPLIED WHEN WORKING ON THE MOVIE – IN DEVELOPING THE MECH MODEL, THE BACKGROUNDS, THE EFFECTS?
We did the modeling in Zbrush, texturing in Maya and Mari. All shaders are prepared with V-Ray materials, V-Ray blend materials and V-Ray SSS. For the rocks and background elements we used Maya. We animated manually and in some of the later shots there will be motion capture as we like the photo real results coming from it. Some of the particles/smokes are generated in Maya, some in Houdini. Compositing and color grading is made in Digital Fusion.
Jumping through different programs to make the smoke effects also had some issues, but with V-Ray geometry cache and alembic export we figured it worked well when exporting and importing to other programs.

WHAT IS THE ROLE OF LIGHT AND TEXTURES IN THE FEATURE'S STORYTELLING? DO YOU USE SPECIFIC SHADERS AND WHICH STRENGTHS OF V-RAY DO YOU FIND PARTICULARLY HELPFUL IN DEVELOPING THE SCENES?
Standard V-Ray materials and the blend material are simple and perfect! We used SSS for some parts where we wanted to achieve certain effects. Different scenes have different lighting. On some of them we used dome lights with GI turned on - brute force (to eliminate flickering) for primary bounce, and light cache for secondary. For the scenes with the mech only we didn't even need to use GI - it was working better only with rectangular V-Ray lights. We placed some sphere V-Ray lights to illuminate and flicker some parts behind the armor.

> We are very happy with the render elements – they are very easy to set up, and very comfortable for the compositing process.
>
> Iliya Atanasov - Studio Director and Lead Artist, Pixelhunters

> Standard V-Ray materials and the blend material are simple and perfect!
>
> Iliya Atanasov - Studio Director and Lead Artist, Pixelhunters

HOW LONG DID THE PROJECT TAKE TILL NOW? AND HOW LONG DID THE RENDERING TAKE?
As we are doing this in our spare time, we do not have a production timesheet for it, but overall we spent about 2 months on it. We recently changed our render farm, so the rendering time is not so crucial, maybe it takes 7-15 mins per frame (including 10 machines), which means for a night we can have a shot with all the passes and elements. On some of the shots we can cheat time as we do not have to render all the background animation - if we have only nodal pan for example - so the timing is even shorter.

WHAT OTHER PROJECTS HAVE YOU USED V-RAY FOR?
We already tested V-Ray in production for commercials, games and architecture, and we are very pleased with the results. The distributed rendering, render passes, and V-Ray materials make our life easier.

SPEAKING ABOUT FEATURES, WHAT IS THE FEATURE THAT YOU WOULD LIKE TO SEE IN THE NEXT BIG V-RAY RELEASE?
We do find V-Ray very stable; it handles a big amount of polygons and is a powerful tool overall. We are waiting for the new SSS shader, we would like to be able to use some of the Maya fluids - "ocean" to be rendered in V-Ray.

Credits:

Iliya Atanasov
art direction, modeling, texturing, animation, lighting, rendering, compositing

Eric McInnes
script writing

Siamak Roshani
mech modeling

Anton Gonzalez
character rigging, animation, fluid dynamics, particles

Helgi Oskarsson
animation, special effects

Rajesh Suseela
animation

Adeel Hashmi
motion graphics

Check out
Miguel Ortega's presentation
at the V-Ray User Event
in Los Angeles

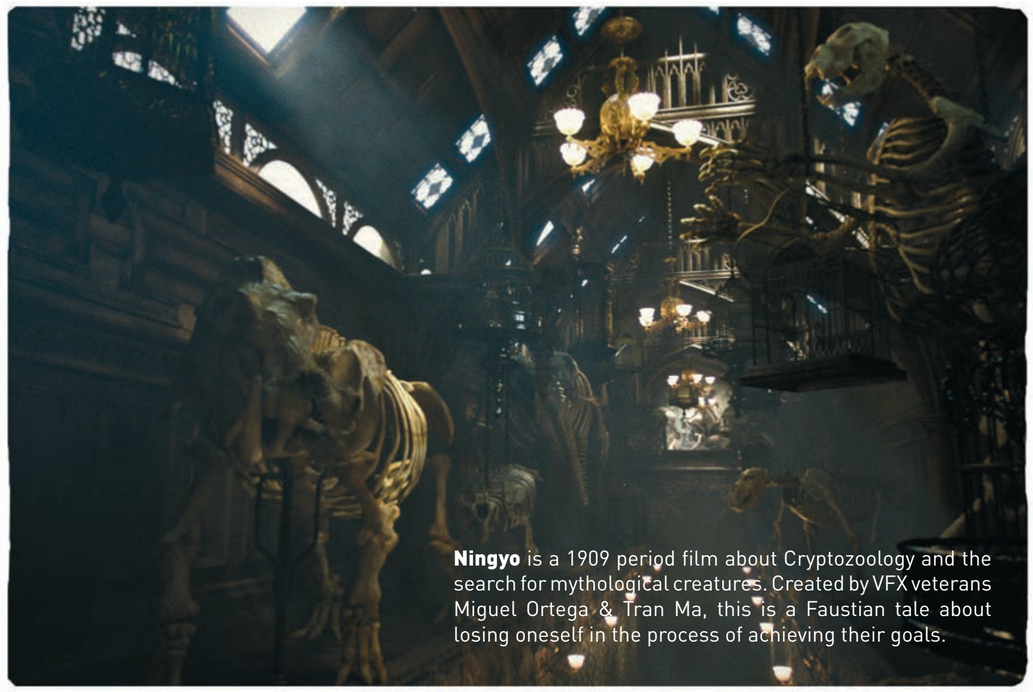
July 26, 6 pm
at the Gnomon School of Visual Effects
1015 N. Cahuenga Blvd.,
Hollywood, CA 90038

Ningyo: Decrypting Cryptozoology

an interview with

Miguel Ortega

Director, **Spy Films**



Ningyo is a 1909 period film about Cryptozoology and the search for mythological creatures. Created by VFX veterans Miguel Ortega & Tran Ma, this is a Faustian tale about losing oneself in the process of achieving their goals.

Images © Spy Films / www.spyfilms.com

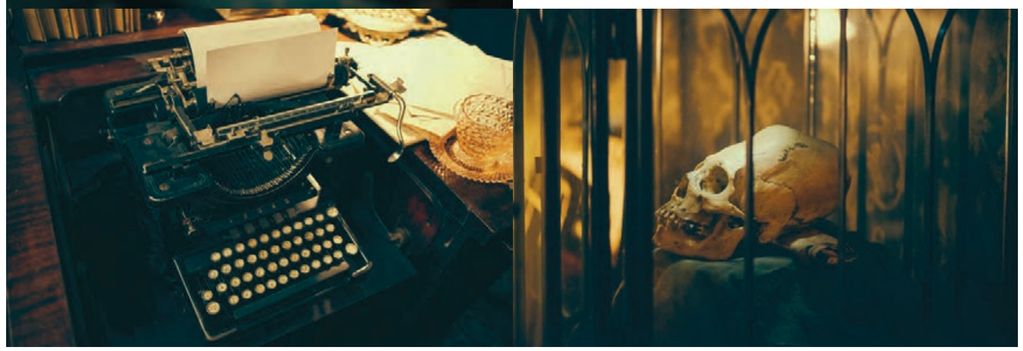
WHAT INSPIRED YOU FOR 'THE NINGYO'?
I love old adventure films (like Indiana Jones, 20,000 Leagues under the Sea etc.) as well as 70's horror and psychological films - 'The Ningyo' is the marriage of those 3 loves.

FANTASY ELEMENTS AND NEW SPECIES ARE A KEY PART OF THE FILM. HOW DO YOU GO ABOUT CREATURE WORK? DO YOU USE REFERENCE IMAGES?
Yes, we base all our creature designs off some earth bound creatures. Everything must come from a real plant or creature. The Ningyo in this film, was designed by my friend Yuo Tengara, a fantastic artist. The Ningyo is a Japanese myth so I thought it was ideal to have not just a Japanese artist but also a woman to execute the creature design and embody all the sensibilities I think I wouldn't have been able to achieve.

YOU ARE USING YOUR LIVING ROOM AND BEDROOM FOR FILM SETS. WHAT IS IT LIKE TO FILM AT YOUR OWN HOUSE AND TRANSFORMING IT INTO A 1909 DÉCOR?
I love it; I get to know the set as a real place. I am in no rush to shoot HDRIs, or texture reference, it's all here for me to use whenever I need it... Of course, there are also downsides but it's a fair trade off.

HOW DID YOU CHOOSE THE CAST FOR THIS FILM?
Talent only. Our three main actors are all accomplished actors from well-known TV shows and films. Most of them are New York actors which we are flying down to LA. We wanted actors that were NOT from the world of genre films, but character actors.

WHY DID YOU SELECT V-RAY AS YOUR LIGHTING, SHADING, AND RENDERING TOOL FOR THIS PROJECT?
We are not technicians, so we don't care about the technical part - we just want pretty images. V-Ray allows us to focus on the art and less on the technical aspects. V-Ray is the renderer I've been waiting for my whole professional career. I love it.



> V-Ray allows us to focus on the art and less on the technical aspects.

Miguel Ortega - Director, Spy Films

Actual Set Work in Progress

WHEN DO YOU EXPECT TO FINISH THE SHORT?
As soon as it's ready - we want to make sure it's perfect. We are aiming for December though.

At SIGGRAPH 2013
Vlado will be showing a preview of the much anticipated V-Ray 3.0.

SIGGRAPH expo center, room 203A, July 24

Session 1: 11:30 – 12:00 pm
Session 2: 3:30 - 4:00 pm

Vladimir Koylazov talks V-Ray 3.0

Photo by WINGS Creative Studio

Vladimir Koylazov (Vlado) has more than 15 years of software development experience, the majority of which he spent developing and improving the render engine V-Ray. Passionate about 3D graphics and programming, Vlado is the driving force behind Chaos Group's software solutions.

Vlado is an expert in rendering theory and an avid 3D community supporter, and he often participates in forum discussions to help users solve rendering challenges.

Vlado holds a degree in computer science from Sofia University.

future's features

TELL US THE V-RAY STORY. HOW DID IT ALL START? WHAT MAKES V-RAY WHAT IT IS TODAY?

In 1997 Chaos Group began as a 3D design and animation studio in Sofia, Bulgaria. For one of our early projects, we needed to blend atmospheric effects, but a proper plug-in was not readily available. We decided to program one, and a few years later Atmos Blender was born! Needing a way to cast realistic shadows with Atmos Blender, we started to write our own ray tracing solution. Impressed by its speed, Peter and I realized this is a tool other artists and designers might be interested in, and the development of V-Ray officially began.

In late 2001, Peter and I launched the first public beta of V-Ray and on March 13, 2002 Chaos Group released the first official version of V-Ray for 3ds Max. The response was overwhelming as artists introduced fast global illumination and ray tracing into their workflow. Today V-Ray is widely used and recognized as the best lighting, shading and rendering solution on the market, and we continue to develop it together with artists every day!

HOW DO YOU DECIDE WHAT FEATURES TO INCLUDE IN EVERY NEW VERSION OF V-RAY?

We listen to our users. Sometimes they directly have suggestions for new features. Other times they describe a particular problem that they need to solve in a more efficient way. We also try to improve on the existing code - either by optimizing it to run faster, or to use less memory, or by making the UI more user-friendly. Sometimes we also experiment with ideas and we have to see whether they will be useful in practice. We also look at the latest trends in the rendering field as a whole.

IF YOU ARE TO DESCRIBE V-RAY 3.0 WITH THREE WORDS WHAT WOULD THEY BE?

Faster.
Simpler.
Better.

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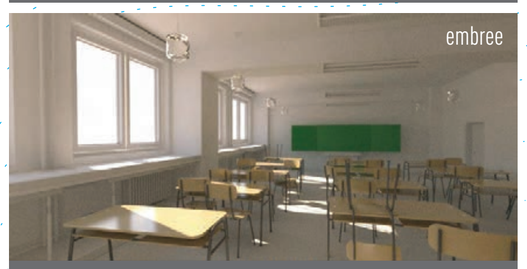
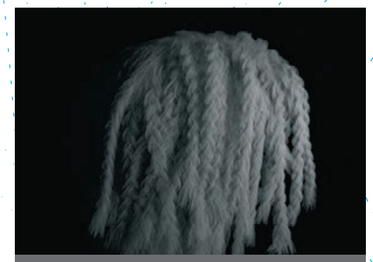
VRAY Adv 3.05.01 | render time: 0h 7m 25.7s



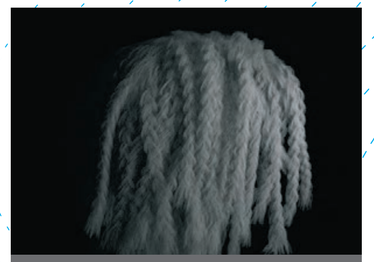
VRAY Adv 3.05.01 | render time: 0h 5m 55.6s

Max ray intensity off | render time: 0h 1m 1.0s

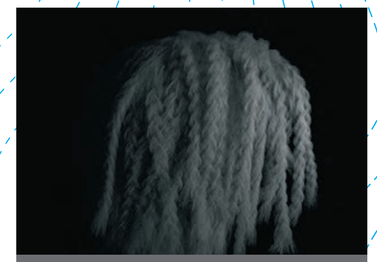
Max ray intensity on | render time: 0h 1m 0.8s



V-Ray for Maya 2.25.01 | render time: 0h 26m 29.9s



After I render time: 0h 5m 3.1s



After II render time: 0h 2m 23.6s

WITH V-RAY 3.0 ON ITS WAY WHAT ARE SOME OF THE TOP IMPROVEMENTS AND NEW FEATURES V-RAY USERS CAN EXPECT TO SEE AND HOW ARE THEY GOING TO BE USEFUL TO THEM?

With V-Ray 3.0 we will be offering a host of new features, optimizations, and improvements that will simplify artists' workflow while offering advanced capabilities and great speed improvements. One of the key improvements will be the simplified workflow. We will be launching a brand new, simplified user interface where the controls artists need are up front and easy to get to. Speed and quality could be adjusted from a single location. At the same time our expert users will still have access to all the advanced controls V-Ray offers. We are also introducing progressive production rendering with accurate path tracing calculations compatible with all V-Ray features. In addition to all that, our users will be able to use universal assets across different platforms. The V-Ray Vismats library, a cross-application V-Ray shader is compatible between any V-Ray enabled application. This will have impact on all of our users who work with advanced materials from the architectural and product design industries to advertising and film. With V-Ray 3.0 we'll also be launching support for the Open Shading Language developed by Sony and this will allow artists to write their own custom shaders.

With the render elements system, V-Ray has been one of the solutions bridging the rendering and the compositing stages of the production process. Now with V-Ray 3.0, we are introducing deep image rendering and support for OpenEXR 2.0. In this way V-Ray will further facilitate the compositing process. Users will also benefit from the amazing speed optimizations we were able to achieve by boosting V-Ray's ray tracing core. Hair rendering speed has been improved and is now up to 15 times faster. V-Ray 3.0 will also support rendering hair for Alembic and .vrmesh files. We are also planning to introduce a new ray traced skin shader with lots of performance optimizations. Thanks to our hardware partners, we've also been able to make advances in hardware acceleration and V-Ray users can take advantage of cutting edge compute technology. There are many more new features and improvements and those who take part in our Beta program will be able to experience all of them firsthand.

WHAT'S YOUR VISION ABOUT THE FUTURE OF RENDERING TECHNOLOGY?

We are already at the stage where we can do completely photoreal images. The hardware is powerful enough so that methods like path tracing, which were unthinkable 10 years ago, can now be used successfully in many cases. The current trend is for renderers to drop cheats and tricks that were used to speed up rendering before in favor of simpler but more robust algorithms. At the same time, scene complexity is ever-increasing with scenes that use gigabytes of textures and geometry so I think that a lot of effort will be spent to optimize memory usage in such cases. Cloud rendering has been a popular discussion topic for the last few years, but we are just starting to see some practical applications. My guess is that it will play a more important role in the future, although it won't replace traditional render farms. GPU-accelerated rendering has come firmly into our lives and has claimed its ground; its usage will continue to increase, although again it probably won't completely displace traditional CPU renderers.

YOU'VE BEEN THE DRIVING FORCE BEHIND V-RAY FOR MORE THAN A DECADE. WHAT FUELS YOUR PASSION AND DEDICATION?

It's because I simply like doing what I do. I've been extremely lucky in this regard. It is not an easy job, but at the same time it is extremely gratifying to see the results from our work.

One Giant Fish:

Factory Fifteen about **Jonah**

an interview with

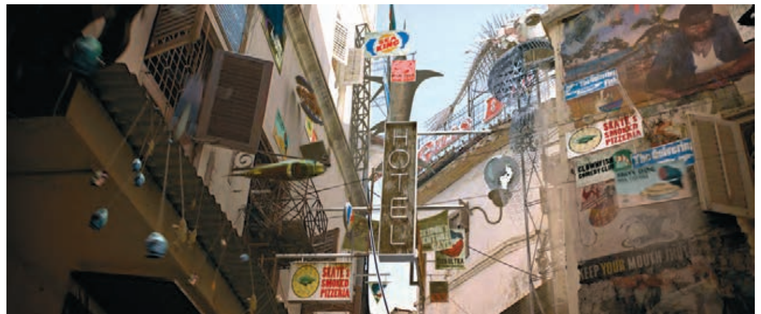
Paul Nicholls

Factory Fifteen is a young visualization studio based in London. Learn about their recent project **Jonah** and their upcoming short-code named 'Under Tomorrow's Sky'.

TELL US MORE ABOUT FACTORY FIFTEEN - WHEN WAS THE STUDIO FOUNDED AND WHAT KIND OF PROJECTS DO YOU WORK ON? WHAT'S THE PROFILE OF PEOPLE WORKING AT FACTORY FIFTEEN?

Factory Fifteen was founded 2 years ago by Jonathan Gales, Kibwe Tavares and myself (Paul Nicholls). We met studying a Masters in architecture at the Bartlet School of Architecture University College London. We created quite experimental architectural animations which went viral on the Internet when we graduated. We had quite a lot of buzz around us at that time so we thought we would start a company and try to do our own work full time. We were lucky we had both a big commercial job and a couple of studio-born projects straight away. One of those studio projects was Jonah.

We work on a variety of projects. The studio's focus is on its own intellectual property in film and concept/production design. We work heavily also in architectural visualization. The different types of work we create really do co-exist and inform each other.



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WHAT INSPIRED YOU TO CREATE 'JONAH'?
Kibwe was under development from Film 4 and wanted to create an ambitious project developed creatively by us at Factory Fifteen and Jack Thorne who wrote the script. It is a kind of re-telling of the Hemmingway story 'The Old Man & The Sea'.

HOW LONG DID THIS PROJECT TAKE ON YOUR END?
On and off for about a year. Jon and myself did all the artwork in 2 months while the script was being developed by Jack and Kibwe. We created a full 2-minute pre-vis over a further month and then we spent 3 weeks in Zanzibar once we had a production company (Stray Bear) in place and a camera crew. For our projects we try to do most of the filming ourself but this one required a larger team. When we got back we spent 3 months on the visual effects with the help of Jellyfish Pictures. Our work focused on the town and Jellyfish worked on the giant fish.

Factory Fifteen's key staff includes senior architectural visualiser **Matt Townsend**, **Kibwe Tavares** (director of Jonah) who is persuing a career as a feature film director, **Jonathan Gales** and **Paul Nicholls**, who are the day-to-day creative directors and oversee most projects. The studio tends to employ people with architectural background as all of its projects whether corporate or creative require an architect's sensibility. Staff numbers can vary between 4-10 people as a variety of freelancers also work with the studio.

Jonah is a story set in the fishing town of Zanzibar of a changing man in a changing town.

Mbwana and his best friend Juma are two young men with big dreams. These dreams become reality when they photograph a gigantic fish leaping out of the sea and their small town blossoms into a tourist hot-spot as a result. But for Mbwana, the reality isn't what he dreamed- and when he meets the fish again, both of them forgotten, ruined and old, he decides only one of them can survive. Jonah is a big fish story about old and new, and the links and distance between them.

A visual feast, shot though with humour and warmth, it tells an old story in a completely new way.

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WHAT WERE SOME OF THE CHALLENGES DURING FILMING AND WHEN WORKING ON THE EFFECTS?

Filming was a stressful time as so much was down to location. The underwater shoot could have been smoother as there were issues with visibility and technical issues with the camera casing. The shoot was crammed into an ambitious 9 days in several different locations around Zanzibar.

Spirits were high on the shoot and as the visual effects supervisor I had to advise on what I thought was possible for the effects. Much of what we had planned we had never done before, certainly not to the desired finish quality, so there was a lot of uncertainty after the shoot. We had a small team of 6 people working on the town effects in post over 3 months which proved extremely challenging. Our deadline was the Sundance film festival in late January 2013. Unbelievably, they accepted the film when it was still in a draft state so we knew we were onto something special and really pulled together to finish it in time at the highest quality our team could achieve.

WHY DID YOU CHOOSE V-RAY FOR THIS PROJECT? WHICH V-RAY FEATURES WERE PARTICULARLY HELPFUL FOR ACHIEVING THE LOOK AND FEEL YOU WERE AFTER?

V-Ray has been our renderer of choice since we purchased our student licences while studying at UCL. V-Ray has proved to be the outright winner by a country mile in the cost/time/quality triangle of renderers and we have tried a lot. It seems the most scalable, working great when working individually as well as in more structured team environments. We lit all of the environments in Jonah with HDRI's recorded in Zanzibar and V-Ray's HDRI loader plugged into a simple dome light proved to work fantastically in every shot. We could easily add additional lights at real life settings thanks to the V-Ray camera setup mirroring our recorded film camera settings. V-Ray can work physically like the real world but also allows an unbelievable amount of control to bend physics a bit where needed. It's this organic approach we find sets V-Ray apart from most renderers. It allowed us to quickly test different ways of lighting and rendering a shot with a hugely forgiving margin for error when working on tight deadlines. We really could trust the settings to do what you expect and we felt a huge amount of control as a result.

I used V-Ray RT on Jonah running on a high end NVIDIA Maximus graphics card setup which meant that loading RT had no stutter or slowdown effect on my screen performance since a completely separate card was being used by RT for compute tasks. I used this at the end of Jonah to materialise and light the inside of the fish (which can be seen in the making of Jonah). This really sped up the look dev process. Having seen a sneak peek of V-Ray 3.0 at EUE 2013, I look forward to getting my hands on the next iteration of this technology.

Paul Nicholls - Co-founder, Factory Fifteen

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WHAT PROJECTS ARE YOU CURRENTLY WORKING ON?

We have just finished a huge design project for an author of a new science fiction project, which is currently being pitched as a multi-episode science fiction drama. We created a 200+ page artwork book consisting of hundreds of images of several designs including space stations, space ships, colonies, ring worlds, abandoned planets and much more. We also created a 5-minute short film as a proof of concept to aid in the pitching process, which is happening later this summer.

Our current studio project is code-named 'Under Tomorrow's Sky' and was born out of a think tank of writers, illustrators, artists, and academics including ourselves to come up with an idea for a future utopian city. Several artists are producing work for the Architecture Triennale in Lisbon this September and we have been commissioned to make a short film. We have actually just came back from India where we decided to set the film after an ambitious 2-week trek across North and East India. We are using orphan non-actor kids as our main cast, playing out a huge game of hide and seek across the country. The idea is that technology, the city, and nature have all intertwined. We decided to show this from a child's game of hide and seek where two of the kids have learnt to hack the city, finding hiding places beyond the city walls, but as a result of their mischief they get lost and have to find their way back.

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Paul Nicholls - Co-founder, Factory Fifteen

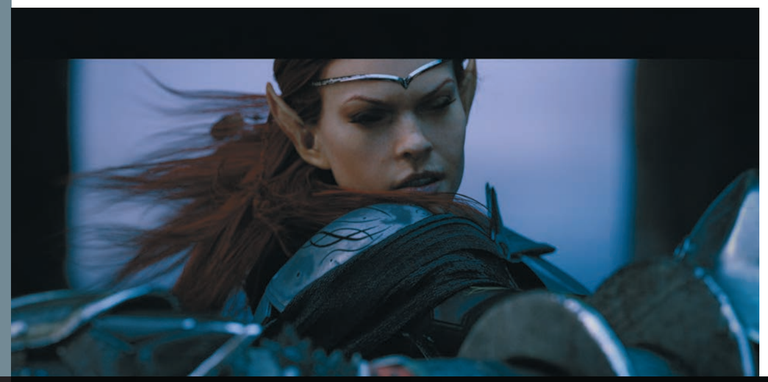
FANTASY HEROES

Don’t miss Blur’s presentation at the V-Ray User Event in LA

July 26, 6 pm at the Gnomon School of Visual Effects 1015 N. Cahuenga Blvd., Hollywood, CA 90038

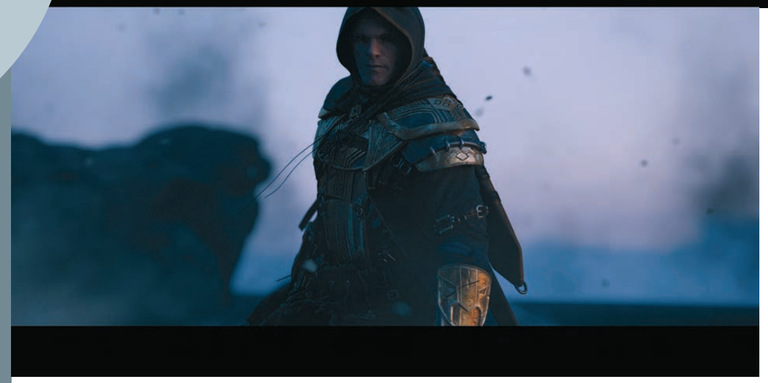
Blur’s Lead Character Artist **Mathieu Aerni** talks about the amazingly realistic characters in the Elder Scrolls Online cinematic.

Images © Blur / www.blur.com



WHAT WAS IT LIKE TO WORK WITH BETHESDA’S TEAM ON THIS PROJECT? DID YOU WORK IN CLOSE COLLABORATION WHEN DESIGNING THE CHARACTERS FOR THE CINEMATIC?

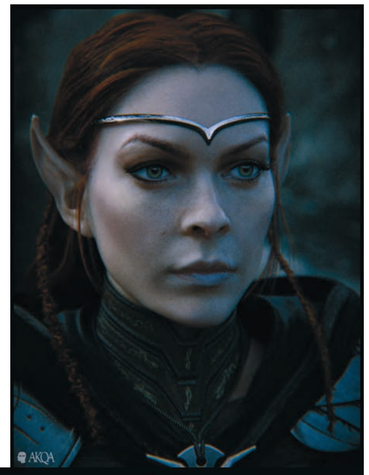
Over the years Blur has developed a great working partnership with Bethesda. From the very beginning of the production it was a great collaboration. We worked closely with them when designing the characters for this cinematic and are very proud with the result.

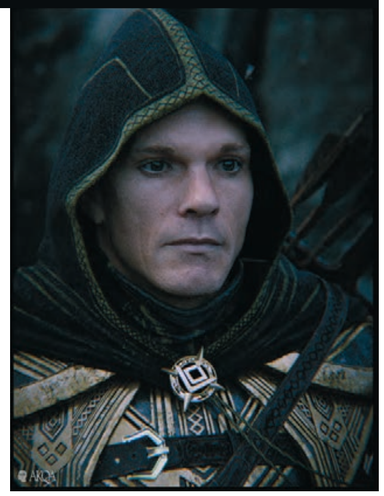


> We could have ended up with insane render times, but we easily managed to keep everything under control.
>
> Mathieu Aerni - Lead Character Artist, Blur

ONE OF YOUR GOALS FOR THIS CINEMATIC WAS TO ELEVATE THE REALISM OF THE CHARACTERS. IN WHAT WAY DID V-RAY CONTRIBUTE TO ACHIEVING THIS REALISM?

First, V-Ray computes very fast in comparison to other GI Solutions. We had a very complicated character on this project, with complex hair styles and complicated armor and outfits. On all hero characters, we decided to poly-model every detail of the armor, like symbols and runes, instead of doing them in textures. On top of that we used displacement on most part, and reflection on all metal pieces. We could have ended up with insane render times, but we easily managed to keep everything under control. The possibility to intuitively optimize the render settings to speed up even more the renders proved to be very convenient during the final stage of improvement. Finessing the shading of all the characters was crucial for elevating realism, and V-Ray made it very easy. Also, all V-Ray materials are just amazing! The VRayMtl gave us beautiful metal shaders, with very convenient reflection and refraction parameters. It’s a physically plausible material, with accurate highlight and very nice blurry reflection. We also use the VRayBlendMtl extensively to layer several materials in a very efficient manner, for example to create war paint on top of the armors, or add a layer of dirt or blood on the characters’ skin.





Images © Blur / www.blur.com

DID YOU USE V-RAY FASTSSS2 TO ACHIEVE REALISTIC SKIN?
Yes. V-Ray FastSSS2 is the most accurate skin shader I've worked with so far. It reacts exactly the way it should under different lighting scenarios. We were able to achieve very convincing results using minimal amount of maps, which is very convenient in production. Also, the prepass rate gave us a very efficient way to lower render time dramatically during the tweaking stage.

YOU USED ORNATRIX AND V-RAY TO CREATE REALISTIC HAIR FOR CHARACTERS. WAS THIS A GOOD WORKFLOW?
Using Ornatrix and V-Ray proved to be a very good workflow. The previous systems we've used had a separate render engine for the hair. We had to create geometry at render time or composite the hairs, which made the process very tedious. Now with Ornatrix and V-Ray we can render the characters and hairs in the same pass and using the same GI lighting solution. This made our lives so much easier. Characters like the Nord Warrior had a very complicated hair style, long hair and a lot of braids.
I was surprised by how fast the rendering was and how painless the process of creating those braids was.

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> Mathieu Aerni - Lead Character Artist, Blur

ARTIST SPOTLIGHT

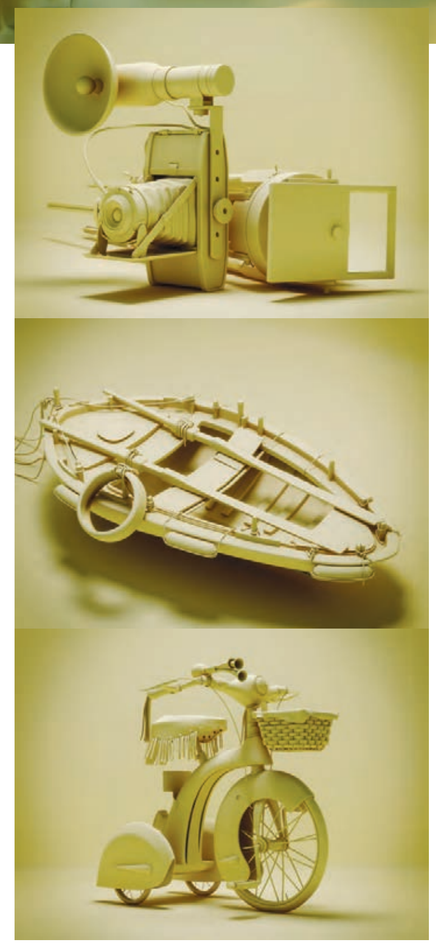
Jose Manuel Linares López

Jose Manuel Linares López is a CG Modeler and a passionate and motivated digital artist who enjoys creating environment/props and characters in all areas of CG production.

Several years ago he founded his own 3D Architectural Visualization Company, carrying out all modeling, shading and lighting tasks, until he decided to focus all his efforts on the modeling process.

Jose holds a degree in Architecture from the High School of Architecture in Granada - Spain. He has developed a special interest in creating full sets and environments.

Chaos Group would like to thank Jose Manuel Linarez López for contributing his models for the new V-Ray help documentation that will be available with the release of V-Ray 3.0.



Models by Jose Manuel Linares López / www.jmlinares.com

ARTWORKFLOW

WE'VE GOT YOUR BACK

COMMUNITY & SUPPORT

The V-Ray community is supportive, collaborative, and very active. Sharing new ideas, workflow techniques, and inspiring artwork is all part of the V-Ray Experience.

Artwork by Asile © 2013
Photographer: Paul Morel