SIGGRAPH2004

Animation Theater Program Part 1

ACM SIGGRAPH Video Review Issue 148

01 Louis 5:15

A puppet discovers the backstage of its show.

PRODUCTION

Modeling: Polygons. Rendering technique used most: Basic scanline rendering. Average CPU time for rendering per frame: 5-15 minutes, depending on shot. Total production time: approximately 250 days, 150 for preproduction and 100 for production.

SOFTWARE

Modeling, animation, and rendering: 3ds max 5. Dynamics: Reactor for puppet's ropes. Compositing: Photoshop scripts, Combustion 2.1. Additional software: Illustrator 10, Photoshop 6, Premiere. OS: Windows 2000.

HARDWARE

PC/AMD single 2 GHz CPU, 512 MB RAM. Graphics card: GeForce4 ti 4200.

Directors: Olivier Barre, Nicolas Bruchet, Samuel Devynck
Producer: Supinfocom Valenciennes
Contributor: One Plus One

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02 Oddworld Stranger CG Intro 2:49

Water privatization has brutally depleted and displaced native inhabitants of the Mongo River Valley. These dire circumstances are of little concern to Stranger, a bounty hunter focused on his own savagely guarded secrets. He gathers living ammunition (giving new meaning to the term 'live ammo') in a garden of graves to prepare for the bounty ahead. In a flash of fur and a series of deft maneuvers he turns the tables and fells his Outlaw, making it clear who is hunting whom. Back at the bounty store, he claims his due. As he steps out, ready for the next Outlaw, this stranger is completely unaware of his fate and its inevitable collision with that of the Mongo River Valley.

PRODUCTION

Modeling: Polygons, some NURBS. Rendering technique used most: Maya renderer. Average CPU time for rendering per frame: 25 minutes. Total production time: 180 days. Production highlight: The entire sequence was created with one CG artist, one animator, one CG tools programmer, and

one production designer. Matte paintings were used extensively to achieve the desired look and feel of the sequence.

SOFTWARE

Modeling, animation, and rendering: Maya 4.5. Dynamics: Maya 4.5, custom plug-ins. Compositing: Shake 2.51. Additional software: Photoshop 7.0, Combustion 3.0. Custom software: Custom plug-ins and scripts for dynamic hair and particles, and pipeline/ productivity tools. OS: RedHat Linux.

HARDWARE

PC/Intel dual XEON 2.8 GHz CPU, 2 GB RAM. Rendering farm: 42 CPUs. Graphics card: FireGL 2. Other: Our latest rendering system includes Angstrom's Opteron Hyperblades.

Directors: Lorne Lanning, Raymond Swanland
Producer: Josh Heeren
Contributors: Art Director: Raymond Swanland; Production Designers: Raymond Swanland, Silvio Aebischer; Animator: Rich McKain; Technical Director: Iain Morton; CG Tools Programmer: Rob Tesdahl; Editor: Josh Heeren; Sound Designer, Composer: Michael Bross; Voices: Lorne Lanning, Michael Bross

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03 Riba 5 57

A cat dreams of being a pianist until the day he makes it, thanks to a strange friend of his.

PRODUCTION

Modeling: Polygons. Rendering technique used most: Multiple simple rendering layers with Maya renderer. Average CPU time for rendering per frame: eight minutes. Total production time: 10 months. Production highlight: Rendering was our principal technical concern in this film, so we used the "Tomcattoonshader" experimental shader by Patrick Jean. Rendering issues were solved only one month and a half before the deadline, and fine work between traditional technique (a lot of painting) and new techniques for the contour line was essential. The render is a multilayer pass compositing, and only for the layer black contour lines.

SOFTWARE

Modeling, animation, rendering, and dynamics: Maya 4.5. Compositing: Adobe Photoshop 6.0, Adobe After Effects 5.5. OS: Windows 2000.

HARDWARE

Three machines with single 2 GHz CPU, 1 GB RAM.

Directors: Yves Dalbiez, Elise Garcette, Laurent Leleu
Producer: Supinfocom Valenciennes
Contributor: One Plus One

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04 Annie & Boo 2:00

For the first time in her life, a teenage girl, Annie, meets a real 'coincidence'. His name is Boo ..and Boo has never met a girl before.

Director: Johannes Wieland
Producer: Michael Schaefer
Contributors: Music: Andi Groll; Writer: Dirk Stoppe

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05 Pfffirate 3:54

An inflatable pirate fights against a clockwork bird which threatens his boat.

PRODUCTION

Modeling: Polygons. Average CPU time for rendering per frame: 3-5 minutes. Total production time: approximately 250 days.

SOFTWARE

Modeling, animation, and rendering: Discreet 3ds max 5.0. Compositing: Discreet Combustion 2.0. Additional software: Adobe Photoshop, Illustrator, After Effects. OS: Windows 2000 Pro Edition.

HARDWARE

PC Intel P4 2 GHz CPU, 1 GB RAM.
Rendering farm: 6 CPUs.

Directors: Xavier Andre, Guillaume Herent
Producers: Supinfocom Valenciennes
Contributor: One Plus One

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06 Rockfish 8:28

RockFish is a comic book-influenced, high adventure tale set on a barren planet in a distant corner of the galaxy. Sirius Kirk is a no-nonsense, working man tasked with rounding up creatures that 'swim' through rocks far below the planet's surface, and plague the miners who live and work there. The story starts out as just another day on the job for Kirk, but quickly turns into a titanic struggle with the catch of his life.

PRODUCTION

Modeling: Polygons. Used motion capture as a base, and blended keyframe animation on top to modify and enhance the performance. Used only keyframe animation on the non-human characters, and a mix of keyframe and dynamics simulations for mechanical and FX animation. Rendering technique used most: All background plates were rendered and lit separately with a simple five-points lighting rig. Characters and vehicles were rendered and lit with one main key light on top of a Brazil skylight. Average CPU time for rendering per frame: 35 - 90 minutes (depending on shot complexity.) Total production time: approximately 800 person-days, spread out over several months. Production highlight: Employees of Blur Studio were asked to submit their ideas for an all-CG animated short, and the studio then voted on the entries. In a collaborative effort with Blur Studio, the winner got the chance to create a short funded by Blur Studio. Because everyone was so passionate about this project, we were able to complete the 800-day production in actually 500 calendar days! Rendered at 2K spatial resolution.

SOFTWARE

Modeling and animation: 3ds max 5.1. Rendering: Brazil 1.02. Dynamics: ClothFX 1.0. Compositing: Digital Fusion 4. Additional software: Adobe Photoshop 7, Adobe Premiere 6, Iridas Framecycler Professional 2.7. Custom software: A lot of custom scripts, to help scene assembly and render stages, most freely available on the Blur beta site (www.blur.com/blurbeta/). Also, developed a network render manager. OS: Windows 2000.

HARDWARE

Workstations: IBM Intellistation with dual Intel Xeon 2.8-3.06 GHz CPUs, 2 GB RAM. Rendering farm: 300+ CPUs, Angstrom dual AMD Athlon 2600, 2 GB RAM. Graphics card: NVIDIA 900 XGL and 980 XGL.

Director: Tim Miller
Producer: Sherry Wallace
Contributors: Writer: Tim Miller; Story: Tim Miller, Jeremy Cook, Paul Taylor, Chuck Wojtkiewicz; Visual Effects Supervisor, Art Director: Jeremy Cook; Animation Supervisors: Jeff Weisend, Tim Miller; Storyboards, Concept Art: Chuck Wojtkiewicz, Sean McNally; Layout Animator: David Nibbelin; Animators: David Nibbelin, Luc Degardin, Jean Dominique Fievet, Makoto Koyama, Davy Sabbe, August Wartenberg, Remi McGill, Jeff Wilson, Jeff Weisend, Wim Bien, Onur Yeldan, George Schermer, Jeff Fowler, Jason Taylor, Derron Ross, Cemre Ozkurt; Modelers: Heikki Anttila, Irfan Celik, Jeremy Cook, Jerome Denjean, Kevin Margo; Finishing and Lighting: Jerome Denjean, Heikki Anttila, Kevin Margo, Jeremy Cook, David Stinnett, Dave Wilson, Sebastoen Chort; Visual Effects: Daniel Perez Ferreira, Seung Jae Lee, Kirby Miller, Sung-Wook Su; Rigging and Cloth Simulation: Paul Hormis; Animation Technical Director: Jon Jordan; Motion Capture Supervisors: John Bunt, Jeff Weisend; Title Design: Jennifer Miller, Wonhee Lee; Motion Capture Actor: James Silverman; Production Coordinator: Debbie Yu; Production Assistant: Amanda Powell; Programming, Systems Administration: Duane Powell, Dave Humpherys, Daemeon Nicolaou, Matt Newell, Barry Robison; Music: Rob Cairns; Sound Design & Recording: Gary Zacuto, Richard Gray, Pete Kneser, Shoreline Studios; Digital Film Recorder: Title House Digital; Film Processing: Fotokem

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07 "Muscle System and Skin Solver" on HELLBOY 2:17

Tippett Studio visual effects supervisor, Blair Clark, rejoins director Guillermo del Toro in creating the creatures and environments for the Revolution Studios movie, HELLBOY. Clark and his team contributed five CG characters in fifteen sequences comprising 132 shots, in numerous day and night, and wet and dry environments. Using hand key framed animation the entire work exhibits a step forward in seamless visual effects. To add another

level of photo realism, and to fully realize the fantastic characters of HELLBOY, Tippett Studio utilized a new, proprietary 'muscle system and skin solver', developed by CG Supervisor, William Todd Stinson, and Character Set Up Lead, Paul G. Thuriot. The muscle system would stretch, contract, and even add tension, all to maintain a consistent volume of underlying anatomical geometry. On top of this, the skin would stretch and slide in response to the motion of the character's internal structure.

PRODUCTION

Modeling: Surfacing and standard polygonal modeling for primary rendering surfaces; proprietary techniques based on naturalistic anatomy for internal muscle surfaces. Some 2D rotoscoping used. Rendering technique used most: RenderMan. Average rendering CPU time per frame: Varied. Total production time: approximately 15 months. Production highlight: Developed a proprietary "Muscle System and Skin Solver."

SOFTWARE

Modeling, animation, and dynamics: Maya. Rendering: RenderMan. Compositing: Shake. Custom software: Custom plug-ins, the muscle system, a Maya plug-in, creates muscle surfaces that expand and contract while deforming to preserve the initial volume. The skin system, a Maya plug-in, builds a renderable surface that is deformed in response to the motion of the character's internal anatomy. As the puppet moves (which, in turn, affects the intermediate layers), the skin stretches and slides over these underlying surfaces. Also custom Prman shaders, and RIB and RIB Archive generation tools. OS: Various.

HARDWARE

PC, Apple, SGI single CPU, average 2 GB RAM. Graphics card: NVIDIA.

Director: Guillermo del Toro
Producers: Lawrence Gordon, Lloyd Levin, Mike Richardson
Contributors: Production Visual Effects Producer: Edward Irastorza; Visual Effects Supervisor: Blair Clark; Visual Effects Producer: Alexandra de Souza; Visual Effects Art Director: Joel Friesch; Animation Supervisor: Todd Labonte; CG Supervisor: William Todd Stinson; VFX Production Manager: Tim de Pala; Animators: Simon Allen, Jason Armstrong, Dovi Anderson, Michael Brunet, Chuck Duke, Will Elder-Groebe, Aaron "Giggleman" Gilman, Traci Horie, Eric Ingerson, Julie Jaros, Michael Kitchen, Brian Mendenhall, Morgan Ratsoy; Lead Lighters: Kirsten Drummond, Steve Redding; Lighters: Jim Aupperle, Aharon Bourland, Conrad Chu, Jeff A. Johnson, Kevin McGowan, Charles Rose, Julien Schreyer, Bart Trickel, Davy Wentworth; Lead Compositors: Colin Epstein, Jim McVay; Compositors:

Dan Cayer, Chris Gibbons, Aruna Inversin, Matt Jacobs, Zoe Peck-Eyler, Gerard Benjamin Pierre, Matthew Wallin; Lead FX Animator: Demetrius Sabina Leal; FX Animators: Nathaniel Hunter, Clear Menser, Ralph Sevazlian, Uma Havaligi, Ariel Tal; Lead Character Set-Up: Paul G. Thuriot; Character Set-Up: Joe Harkins, Peter Newsome; Lead CG Painters: Laura Hainke, Raine Reen; CG Painters: Renee Binkowski, Ruth Caspary, Edward Quintero, Sara Simon; Lead CG Modeler: Sven Jensen; CG Modelers: Dylan Gottlieb, Ease Owyeung, Jeff Unay and Robert Vignone; Lead Match-Move: Kirk Larkins, Christopher Paizis; Match-Move: Devin Breese, Tyler Ham, Dong Yon Kang, Stephen Moros, David Petry; Lead Roto, Paint: Rick Markle; Roto, Paint: Misty Segura Barbour, Shelley Campbell, Lucinda Chee, Robert Dorris, Ramona Martinez; VFX Coordinators: Genevieve Proctor McMahon, Naomi Ruth Raine; Production Assistant: Veronica D. Savage; VFX Editor: Sarah Schubart; VFX Editorial Assistants: Salvatore Catanzaro, Thomas Krebbs; Digital Imaging Supervisor: Matthew Tomlinson; Film I/O Supervisor: Nathan Abbot; Digital Film I/O Manager: Vicki Wong; Digital Color Corrector: Adam Gerardin; Production Programmer: Russell Darling; Systems Support: Neal Hoover, M. Stevens; Data Wrangler: Deborah Thomas; Executive Producers: Jules Roman, Alonzo Ruvalcaba

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08 **Ruby: The DoubleCross** 1 51

Through the use of motion captured animation, depth-of-field, realistic image based lighting and dynamic shadows; "DoubleCross" borrows heavily from both gaming and movie genres to create a compelling demo that further raises the expectations for real-time graphics.

In making "DoubleCross", the real-time expertise of ATI's demo team was combined with the creative and artistic talents of RhinoFx to create characters, environments and a story that was visually and emotionally appealing while demonstrating the real-time programmable graphics capabilities of ATI's latest hardware.

"Doublecross" introduces the near future world of ATI's "Ruby" and her arch enemy "Optico". In an action packed 1 minute and 40 seconds, Ruby has to outwit the cunning "Optico" as he attempts to cheat on an exchange. Ruby not only has to use her wits but battle Optico's Ninja henchmen. Culminating in an explosive ending, Ruby escapes, leaving Optico vowing revenge.

PRODUCTION

Modeling: Polygons. Motion capture blended with keyframe animation. Rendering technique used most: real-time rendering using ATI's in-house demo engine. Average CPU time for rendering per frame: Average of 40 frames per second. Total production time: approximately 300 days. Production highlight: New real-time techniques for rendering hair, skin, and depth of field were developed for this demo.

SOFTWARE

Modeling and animation: Maya 5.01. Rendering: ATI Sushi Demo Engine 2.0. Additional software: Motion Building (mocap), ATI's Normal Mapper. Custom software: Workflow and Asset Management Software, Sushi Demo Engine, Maya plug-ins, RenderMonkey, Normal Mapper tools. OS: Linux Redhat 9 (for Maya), Windows XP (for Runtime).

HARDWARE

PC 3 GHz CPU, 512 MB RAM. Hardware rendering was used for final renders. Graphics card: ATI RADEON X800.

Director: Harry Dorrington
Producers: ATI, RhinoFx
Contributors: Creative Project Director: Stephen Smith; Technical Project Director: Callan McInally; Programming Lead: David Gosselin; Art Lead: Eli Turner; Shader Programming: Thorsten Scheuermann, Pedro Sander, Jason L Mitchell; Senior Executive Producers: Rick Waggonheim, Camille Geier; Senior Producer: Karen Bianca; Story & Concepts: Harry Dorrington, David Zung; Storyboarding, Visualization: David Zung, Ji Yoon; Lead Animator: Jeff Guerrero; Technical Consultant, Animation: David Barosin; Animator, Modeler: Dan Vislocky; Lead Lighter, Project Lead: Joe Burrascano; Texture Artists, Lighters: Chimin Yang, Ido Kalir; Lighter: Natalia Senko; Shader, Texture Artist: Dylan Maxwell; Texture Artist: Martin Boksar; Modelers: Paul Liaw, John Velazquez, Shin Kull; 3D Artist: Michael Ware; Technical Animation, Dynamics: Ji Yoon; Technical Director: Jesse Clemens; Compositor, Graphics: Guy Atzman; Editor, Compositor: Marc Steinberg; Software Development: Jim Callahan; Systems Engineer: Paul Tsung; Photoshop Artist, Graphics: Chris Green; Motion Capture Production Manager: Kristen Ames; Motion Capture: Perspective Studios; Motion Capture Stunt Actors: Declan Mulvey, Andre "Chyna" McCoy, Casey Eastlick; Fight Coordinator: Declan

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Mulvey; Casting: Wendy Litwack Casting; Voice Talent: Marlyne Afflack, Chris Phillips; Music House: Amber Music; Music Producer: Kate Gibson; Music: Will Richter; Sound Design: Bill Chesley; Voice Record, Mix: Tonic New York; Sound Engineer: Jody Nazarro

09 **Japan** 2:00

After World War II, Japan accomplished an economic revival. The concentration of population in the cities came during the high economic growth period when construction and housing development advanced rapidly. A positive financing policy for financial institutions during the robust economic times of the 1990's resulted in large-scale development by quasi-public corporations. However, large-scale development ended simultaneously with the bursting of the economic bubble. As a result, real estate value dropped sharply with the frequency of bad loans. Further fiscal deficit was generated by the protection of financial institutions by the Japanese Government. The balance of the funded debt that the Japanese Government holds has reached as high as 900 Trillion Yen (US$8T) as of 2004.

PRODUCTION

Modeling: Polygons. Rendering technique used most: Mental Ray's final gathering. Average CPU time for rendering per frame: 30 minutes - five hours. Total production time: five months. Production highlight: Students had a very strong and unique concept. Adjusting textures was challenging due to the mixed production environment: Maya and XSI.

SOFTWARE

Modeling, animation, rendering, and dynamics: Maya 5.0, Softimage | XSI V3.5. Compositing: Avid | DS 4.0, Premiere 6.0. OS: Windows XP Pro.

HARDWARE

PC Intel Xeon single 3.2 GHz CPU, 1 GB RAM.

Director: Nobuo Takahashi
Producer: Naoki Hashimoto
Contributors: Animators: Kan Ueta, Takashi Odagiri, Takeru Kosaka, Mitsue Nagasawa, Kentaro Homma; Music: Hironobu Yahata

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10 The Fall 2:59

A small vine grows on the edge of a cliff completely unaware of the ruthless upheaval coming in its future. The vine grows curious of the new presence in the distance when suddenly the vines world is completely turned upside down. The result is a life and death struggle between man and nature.

PRODUCTION

Modeling: NURBS and subdivided polygons. Rendering technique used most: Ray-traced shadows with a raycast beauty pass. Used Shake to composite the layers and post-process the image using simulated depth of field with the Z buffer image. Additional filters were used for blurring effects and color correction. Average CPU time for rendering per frame: 10 - 15 minutes. Total production time: approximately 300 days (from preproduction to finished project). Production highlight: The production process at Ringling School of Art and Design is special because of the people. We have constant faculty critiques, teachers meet with students on their own time, students critique each other on a constant basis.

SOFTWARE

Modeling, animation, rendering, and dynamics: Maya 5.0. Compositing: Shake 2.51. Additional software: Adobe Photoshop 7.0.1, Body Paint 2, Premiere 6.5. OS: Windows XP 2002.

HARDWARE

IBM Intellistation Z Pro dual 2.67 GHz CPU, 1.5 GB RAM. Rendering farm: 200 CPUs. Graphics card: NVIDIA Quadro FX 2000.

Director: James Willingham
Producer: Ringling School of Art and Design

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11 Voice of Whale 2:24

"Vox Balaenae (Voice of Whale)" is music composed by the American experimental composer, George Crumb. His noting method is unconventional, it's very fluid and artistic. This piece is an abstract visualization of his music that carries his idea into animation. The music notes are flying underwater and come from a giant shell with a texture of music notes.

PRODUCTION

Modeling: hyper-NURBS. Total production time: 90 days. Production highlight: Cinema 4D integrates well with After Effects; most 3D elements were rendered in black and white to save rendering time and colored in After Effects.

SOFTWARE

Modeling: Maxon Cinema 4D 8.1. Animation: Adobe After Effects 5.5. Compositing: Adobe After Effects 5.5. Additional software: Adobe Photoshop 7, Illustrator 10. OS: Mac OS 10.2.

HARDWARE

Apple Mac G4 dual 800 MHz CPU, 1.25 GB RAM.

Director/Producer: Heebok Lee
Contributors: Dan Boyarski

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12 The Painter 3:54

"The Painter" tells the story of a tiny robot artist made up of spare computer parts. Stuck in a dark and gloomy room, our little hero dreams of impossible adventures turned into paintings on the walls. All that is set to change the day he summons a genie who grants him three wishes.

This four-minute film was created by the UK-based award-winning production company 422 in collaboration with researchers from HP Labs, Bristol, UK. The animation was rendered using a prototype rendering service developed by HP Labs running on an HP Utility Data Center (UDC). By tapping into large amounts of compute power, on-demand, 422 was able to meet the aggressive deadline without sacrificing production values.

This collaboration demonstrates how computing resources can be assembled, organized and managed virtually using the flexibility of the UDC, a key component of the HP

Adaptive Enterprise architecture. It also illustrates the value of utility computing, in which an end-user taps into a large pool of virtual resources, but pays only for what is used.

PRODUCTION

Modeling: NURBS. Rendering technique used most: Maya's software renderer's raytracing. CPU time for rendering per frame: 38 minutes. Total production time: 2.5 months. Production highlight: This film was rendered on HP's experimental utility rendering service developed by HP Labs, Bristol, UK. Over 18,000 frames were rendered in 17 days, with the number of processors flexing from 18 to 104 to meet the variable rendering demand during that period, enabling 422 to meet an aggressive deadline.

SOFTWARE

Modeling, animation, rendering and dynamics: Alias Maya 4.5. Compositing: Quantel Editbox. Custom software: HP's experimental utility rendering service was used for rendering the film. OS: Windows (various) for workstations, RedHat 8 Linux for rendering farm.

HARDWARE

PC/Intel dual 1 GHz CPU, 1 GB RAM. Rendering farm: 104 CPUs (ProLiant DL360s with dual 1.4 GHz PIII CPUs, 4 GB RAM, 72 GB HD).

Director: Andy Power
Producer: Anne Farrell
Contributors: Rycharde Hawkes, Stephen Hinde

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13 Fortune Teller 217

Sometimes we need help realizing the significance of other people in our lives. Often, we take them for granted, never considering the potential impact it may have on our future. It can be overwhelming to learn that your true fortune lies in your own hands.

PRODUCTION

Modeling: Subdivision surfaces. Rendering technique used most: Maya software renderer. Average CPU time for rendering per frame: approximately two minutes. Total production time: approximately 240 days. Production highlight: Had a shortage of production time due to early SIGGRAPH 2004 submission deadline.

SOFTWARE

Modeling, animation, rendering, and dynamics: Maya 5.0. Compositing: Shake 2.5. Additional software: Premiere 6.0. OS: Windows XP Professional.

HARDWARE

IBM Intellistation 2.6 Ghz dual CPU, 1.5 GB RAM. Rendering farm: 200 CPUs.

Director: Sung Chung
Producer: Ringling School of Art and Design

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14 Man's First Friend 2 53

How did caveman and canine become acquainted? "Man's First Friend" is the story behind their first encounter. This project was first and foremost story driven. Almost as much time resolving the animatic was spent as building out the movie (slight exaggeration).

Design-wise it was very important to develop a 'caveman' world that was NOT "The Flintstones" in any way. The rolling hills were influenced by the geography of San Lois Obispo.

The use of a toon shader was used to give the 3D environment a unique feel. A separate light system was setup to render a shadow pass only; this allowed for very clean individual control over the toon shader and the shadows as separate graphical elements composited later.

PRODUCTION

Modeling: Subdivision surfaces. Rendering technique used most: Every shot had two separate lighting setups - one for lighting the elements in the shot, and one for the cast shadows. This ensured total control over the look of the toon shader and then placement of the shadows as clean graphical elements. They were composited together in After Effects. Average CPU time for rendering per frame: approximately 3-4 minutes, sometimes longer given the fact that the toon shader calculation is based on a raytrace function. Total production time: 2.5 months. Production highlight: The project was produced well under budget; there was no waste in the pipeline. It has its own style and look, yet the economic factors that were considered every step of the way did not lower the quality of the piece.

SOFTWARE

Modeling, animation, and rendering: 3d studio max 5.1. Compositing: After Effects 6. Additional software: Adobe Premiere 6.5, Photoshop 7. OS: Windows 2000.

HARDWARE

PC single 2 GHz CPU, 1 GB RAM.
Graphics card: NVIDIA Quadro 4 750 XGL.
Director: Allen Mezquida
Producer: Paul Owens
Contributors: Animators, Co-Writers: Tony Maki, Dan Bransfield

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15 Offspring 'Hit That' 3 00

Williams and Lea have created a video that mixes real with unreal. To achieve this, they have created strong, graphically designed characters, part men, part prosthetic and part CG. The video involved most of the in-house CG team at Passion Pictures to produce the character animation and lip sync. Rushes were responsible for the telecine and Inferno work to create the video's atmospheric live action settings. Realise Studios handled the CG tracking for the eyes and mouths and fellow Passion director Darren Walsh and Scary Cat Studios made the masks.

The video features a manic dog, who has gone on a wild rampage from his suburban home to the depths of the city. His owner tracks him down after following his path of chaos, overturned bins, a half eaten leg and fallen lampposts, determined to tame his wild beast. The chase reaches its climax with the dog surrounded by his owner, a vet and the dog's angry illegitimate puppies.

Directors Williams and Lea say, "All of our previous projects have been extremely low budget, so it was a nice change for us to be able to work with a full film production crew, model makers, and a Great Dane!

PRODUCTION

Modeling: Subdivision surfaces. Rendering technique used most: Lightwave renderer, mainly shadow-mapped lights. Average CPU time for rendering per frame: approximately two minutes. Total production time: 35 days. Production highlight: The process of making the "Hit That" promo was trial and error. The directors used many techniques both in camera and in post production to bring all the elements together. The total post-production time was little more than two weeks, so many creative short cuts had to be devised.

SOFTWARE

Modeling: Lightwave 7.5. Animation: Messiah Studio 1.5. Rendering: Lightwave 7.5. Compositing: After Effects 5.5, Flame. Additional software: BouJou. Custom software: SuperBlender plug-in for Messiah used for facial animation and Point Oven 1 used to take animation from Messiah to LW. OS: Windows 2000 sp3.

HARDWARE

PC/Intel dual P4 Xeon 3 GHz CPU, 2 GB RAM. Rendering farm: 125 CPUs.

Directors: John Williams, David Lea
Producer: Russell McLean
Contributors: Andrew Ruhemann, Cath Berclaz, Mark Wilson, Chris Hemming, Jason Nicholas, David Sigrist, Stuart Hall, Stuart Rowbottom, Wes Coman, Nikos Gatos, Antoine Moulineau, Matt Everitt, Le Floch Loic, Bruno Hajnal

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16 **No Limits** 1 00

A social spot for children's rights.

PRODUCTION

Modeling: Polygons. Rendering technique used most: Layer-based Mental Ray renderer. Average CPU time for rendering per frame: 5-8 minutes. Total production time: approximately 90 days.

SOFTWARE

Modeling and animation: Maya 5. Rendering: Maya 5, Mental Ray. Compositing: Digital Fusion. OS: Windows XP Professional.

HARDWARE

Dual 2 GHz CPU, ea. 2 GB RAM. Rendering farm: 40 CPUs.

Director: Heidi Wittlinger
Producer: Tobias Lindörfer
Contributors: Animation: Heidi Wittlinger, Max Stolzenberg, Anja Perl

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www.animationsinstitut.de

17 I'm Walking 2 25

What happens when six chickens compete in a hurdle race without having any knowledge about sports and its rules at all?! Well, how could they? They're just chickens!!

"I'm Walking" is a completely 3D animated commercial, screened in cinemas across Germany. A young, healthy rooster wins against five competitors, coming from a laying battery, symbolized by a scenery of huge blocks of flats.

PRODUCTION

Modeling: Spline and Patch. Rotoscoping: 2D sketches were used in the viewport backgrounds for modeling. Rendering technique used most: Raytracing with a domelight setup. Average CPU time for rendering per frame: approximately 7 minutes (all passes on a single CPU). Total production time: approximately 2.5 months.

SOFTWARE

Modeling, animation, rendering, and dynamics software: Hash Animation Master 10.0. Compositing: Adobe After Effects 5.5. Additional software: Anzovin Studios "The Setup Machine" 1.2. OS: Windows 2000 Professional.

HARDWARE

Single CPU average 2 GHz, average 1 GB RAM. Rendering farm: 8 CPUs.

Director: The Soulcage Department
Producers: Gero von Braunmuehl
Contributors: Elmar Keweloh, Joachim Bub, Michael Meyer, Wilhelm Landt, Martin Ernsting, Bodo von Braunmuehl

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18 My Grandpa 6 00

The movie is honor paid to my grandpa and his love of mankind. It is a realistic scene of my grandparents life and grandma's inability to understand grandpa's strong personality.

PRODUCTION

Modeling: Proxy polygons (smooth proxy in Maya), and some NURBS. Rendering technique used most: Maya renderer with raytracing. Average CPU time for rendering per frame: 18 minutes. Total production time: 540 days.

SOFTWARE

Modeling, animation, rendering and dynamics: Maya 4. Compositing: Premiere 6.5. Additional software: Photoshop 7, Vegas 4, Sound Forge. ●S: Windows XP.

HARDWARE

PC/AMD Athlon single 1.7 GHz CPU, 512 MB RAM. Rendering farm: 2 CPUs. Graphics card: GeForce2 MMX.

Director/Producer: Petr Marek

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19 "Machine City" in THE MATRIX REVOLUTIONS 3 18

Guided by Tippett Studio senior visual effects supervisor, Craig Hayes, Tippett Studio created the full CG scenes of the digital environments and denizens of Machine City: a living fractal reef, populated by super towers illuminated by electrostatic activity and a glowing internal radiance. Each of the 140+ shots contain at least 25 elements with many containing more than 125. The work was created with a fleet of SGI Origins, Macs and PC workstations running Linux and Windows using Maya, Pixar Renderman, Apple Shake and critically important custom software.

The digital environments include: scorched terrains with fractured ravines; massive power lines bristling with electricity; electrical storms and lightning bolts created as 3D puppets; and chemically poiluted skies, roiling with contaminants, where small patches of "god ray" light produced with procedural shaders filter through.

The digital inhabitants include: the Armada, an infinite barrier of giant, crustacean defenders, each a hyper detailed model: Tow-Bombs, launched in the thousands, exploding in particle based pyromania, complete with tendrils of flame, smoky residue, and raining debris; and a Machine God, modeled on the Wachowski Brothers' baby nephew, made up of 30,000 characters, each controlled by particles with simple behaviors following algorithms to vary their paths.

PRODUCTION

Modeling: Maya NURBS and polygons to model city component libraries, based upon concept drawings from Geoff Darrow. Some 2D rotoscoping used. Rendering technique used most: RenderMan, with extensive use of DelayedReadArchives. This allowed us to easily swap which of several different resolutions of models to actually use at render time. Average

rendering CPU time per frame: 6-10 hours. Total production time: 18 months. Production highlight: This completely CG photo-real sequence, with little live-action photography, required building a massive living city. Component libraries of building pieces were built in such a fashion they could be used both procedurally or with hand dressing to create a densely layered cityscape that could be shaded either realistically or in a highly stylized manner (as in "neovision").

SOFTWARE

Modeling, animation, and dynamics: Maya. Rendering: RenderMan. Compositing: Shake. Custom software: Custom plug-ins, custom Prman shaders, RIB and RIB Archive generation tools. OS: Various.

HARDWARE

PC, Apple, SGI single CPU, average 2 GB RAM. Graphics card: NVIDIA

Directors: Larry Wachowski, Andy Wachowski
Producers: Joel Silver, Grant Hill
Contributors: Visual Effects Supervisors: John Gaeta, John Des Jardin; Senior Visual Effects Supervisor: Craig Hayes; Visual Effects Producer: Amy Wixson; CG Supervisor: Johnny Gibson; Visual Effects Supervisor: Scott Souter; Art Director: Grant Alan Niesner; Animation Supervisor: Simon Allen; Digital Production Managers: Athena Yvette Portillo, Les G. Jones; Visual Effects Editorial: Sarah Schubart; Animation Leads: Dovi Anderson, Thomas Schelesny; Animators: Michael Brunet, Chuck Duke, Aaron Gilman, Traci Horie, Eric Ingerson, Julie Jaros, Daniel Loeb, Guido Muzzarelli, Jason Shulman; FX Animation Leads: Demetrius Leal, Daniel Rolinek; FX Animators: Eyal Erez, Christopher Lyman, Yman Hamilton, Michael Johnson, Clear Menser, Naz Shams, Melissa Tseng, Bryan Whitaker; Lighting Leads: Lloyd Royal Bernberg, Charles Rose; Lighting Technical Directors: Mark Andrew, Steven Demers, Brad Fox, Steven Quinones-Colon, Julien Schreyer, Bart Trickel, Jim Valladao, Kelly Walsh, Matthew Welker, Davy Wentworth, Nelson Andrew White; Compositing Leads: Alan Boucek, Matt Jacobs; Digital Compositors: Dan Cayer, Brennan Doyle, Page Frakes, Chris Gibbons, Aruna Inversin, Jeff A. Johnson, Zoe Peck-Eyler, Gerard Benjamin Pierre, Ari Rubenstein, Josh Saeta, Matthew Wallin; Matte Painter: Kent Matheson; Layout Lead: Christopher Paizis; Layout: Stephen Moros, Mark Siew; Model Lead: Joseph Hamdorf; Model: Jon Childress Farmer, John Koester, Paul Zinnes; Paint Leads: Aaron "Pandacat" Florez, Andy Harbeck; Paint: Nathan Stinus Fredenburg, Haskell Friedman; Puppet Lead: Matthew Muntean; Puppet: Peter Newsome, Tracey Roberts; Matchmove: Devin Breese, Kirk Larkins, Eric Marko; Rotoscope: Robert Dorris, Rick Markle, Ramona Martinez, Misty Segura Barbour, Kenneth Voss; Digital Coordinators:

Jaimie Lee Jota, Naomi Ruth Raine; Assistant Digital Coordinator: Christopher Hall; Production Assistants: Lisa Fay, Ron Nichols; Render Wranglers: Christine Gatchalian, Nate Reid; Film I/O: Vicki Wong, Nathan Abbott, Matthew Tomlinson; Production Software Development: Markus Burki, Doug Epps, Michael Mortimer; Head of Operations: Dam McNamara; Director of Systems: Christian Rice; Studio Controller: Suzanne Yoshi; Head of Production: Alonzo Ruavalcaba; Executive Producer: Jules Roman

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20 Inseparable Bonds 3 11

●ffering a fresh alternative to 'reality' television, presenting instead 'surreality' television. ●ur host with the most "Sir Real" interviews his latest special guest, a couple who have merged mind, body, soul and gender to become the one abominable character - Gareena.

The talking "heads" (Gareena-character) were achieved by mapping steady-tracked footage of the actors onto 3D-geometry. IK was then used to control the neck rotations. Since this is such a dialogue intensive movie, a smart way to bring these two characters to life was essential. Animating the heads with a 3D-lip-sync solution would have been an extremely time-intensive affair. "Sir-Real", shot against blue-screen acts on a 3D-CG-stage and environment. The 3D `follow-spot' effect was enhanced by compositing `live-action' dust.

The 3D 'Gareena-vehicle' is complete with 3D-particle-exhaust-smoke. The holographic-"aura"-effect on the Sir-Real character are Maya particles. The `Lady-Beetle' was built to proportions of the actress via digi-stills, also used to create texture-maps. The animation achieved via IK was based on the actress's dance, exaggerated with leaps etc. The 'outro sequence' also features `helicopter-chickens' - IK animation, multi-layered 3D particle 'fog', multi layered 3D textural planes and objects, depth-of-field and detailed shadow passes - composited via Shake.

Director: Lars Magnus Holmgren
Producer: Dominic Buttimore
Contributors: Sound Design: We Write Music Ltd.; Camera, Lighting: Matt Lee-Redman; Editor: Alan Andrews; Cast Representation: Olivia Bell Ltd.; 3D Animation: Lars Magnus Holmgren; Stage Manager, Gaffer: Robert Le

Merle; Assistant Stage Manager: Michelle Ricci; Titles and Credits: Lars Magnus Holmgren; 2D Pre Visualization: Andrew (Ziggy) Ziggourias, Christophe Allender, Paul O'Shea; Digital Compositing: Lars Magnus Holmgren; Steady Tracking: Francois Gilguy, Lars Magnus Holmgren, Ric Comline, Nick Seresin; Digital Matte Cutting: Richard McKeand; Key Grip: Jonathan Coutts; 3D Particle R&D: Greg Massie; Data Management: Paul Stocker, Sal Umerji, Paul Brannan; Bookings: Sam Davidson, Oliver Money, Sharrudin Rosunally; Bluescreen Facilities: Centrestage Studios Ltd.

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