Eurographics 2005

Animation Theatre

Ronan Boulic (Chair)

The European Association for Computer Graphics
26th Annual Conference

EUROGRAPHICS 2005
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EUROGRAPHICS
THE EUROPEAN ASSOCIATION
FOR COMPUTER GRAPHICS

IMAGE SYNTHESIS GROUP

TRINITY COLLEGE DUBLIN
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Preface

For the first time this year, an Animation Theatre has been screened during the conference. Authors from twelve countries submitted entries in a wide range of categories (2D, 3D, mixed media) and application fields: Scientific Demo, Independent Short Film, Commercials, Real-Time Animation. In addition to being selected, entrants were also competing for the 1000 Euro prize, sponsored by Pixar to whom we offer heartfelt thanks for their support. Additional awards were made to the best entries in the "independent short film" and "scientific demos" categories, and for the best Student Entry. This year, we experimented with an entirely on-line submission process. To ease the submission and the work of the jury, we accepted any format that could be viewed with the open source player VideoLan. Upon acceptance, the final version in DVD format could be provided through ftp or on a CD/DVD. The international selection jury had on-line access to all submitted pieces (one animation and three stills per submission) to ensure fair treatment in the selection process. A voting process resulted in a final program of twenty-three original pieces, among which six were nominated for the above-mentioned prizes. At the time of writing the names of the prize winners was not known, as a second round of voting among nominated entries took place during the conference itself. We would like to thank the international jury members for all their hard work.

We also wish to thank Juan Montes de Oca, responsible for the Master in Computer Animation from the University of Balearic Island and initiator of the Animation Festival Mundos Digitales in A Coruña, Spain, for his great help in the diffusion of our call for submissions, both on-line and off-line.

Finally, we are greatly indebted to our local organizer Keith O'Conor, who set-up the on-line system and coordinated the projection of the show. We also extend our thanks to the Eurographics publishing team in Braunschweig for helping us in finalizing the DVD version of this new type of session.

Ronan Boulic,

August 2005

International Selection Jury

Mireille Clavien
Designer, winner of the Eurographics CGF cover contest 2004
Ecole Polytechnique Fédérale de Lausanne, Switzerland

Roberto Maiocchi,
Technical Animator
SONY Pictures Imageworks, Culver City, CA., USA

Amaury Aubel
FX Developer
DreamWorks Animation, Glendale, CA., USA

Miguel Mascaro,
Lecturer in Computer Graphics and Film Director
University of Balearic Island, Spain

Keith O'Conor
Computer Graphics Scientist
Image Synthesis Group, Trinity College Dublin, Ireland

Ronan Boulic
Senior Researcher and Lecturer
Ecole Polytechnique Fédérale de Lausanne, Switzerland

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Mesh - Subdivision Excerpt

Beau Janzen, *Zipheron Design Labs*
Konrad Polthier, *Konrad Zuse Zentrum (ZIB)*

Mesh explores the advancement of discrete geometry from the ancient Greeks to contemporary research topics. The animation takes advanced concepts in differential geometry that have never previously been visualized and conveys them in a way that is palpable and relevant to even a novice audience. The subdivision excerpt demonstrates how the angular surface of a discrete mesh can be made smooth through a mathematical process of cutting off corners. Cutting and slicing and chopping and cleaving and hacking…

Mesh - Platonic Solids Excerpt

Beau Janzen, *Zipheron Design Labs*
Konrad Polthier, *Konrad Zuse Zentrum (ZIB)*

Mesh explores the advancement of discrete geometry from the ancient Greeks to contemporary research topics. The animation takes advanced concepts in differential geometry that have never previously been visualized and conveys them in a way that is palpable and relevant to even a novice audience. The Platonic solids excerpt describes the discovery of the five regular polygonal meshes, the harmonies found in these solids, and their use in a primitive table of elements.

Tango on Saw

Caroline Attia
ENSAD

In a Parisian building, the strangeness of Thomas' new neighbor and his peculiar physical aspect turns on his imagination.

Epoch

Clavien Mireille, Ronan Boulic, Branislav Ulicny - *EPFL-VRLab*
 Dirk Oosterlynck, Iris Langen, Tom Nevejan, Truus Helsen. - *EnameCenter*

This short film presents a reconstruction of the abbey of Ename and its inhabitants around 1050 A.D. The aim of the scenario is to present the "kromstaf" (a crosier) as it was used in historical times.

EPOCH = European Network of Excellence in Processing Open Cultural Heritage IST-2002-507382.

ERATO

Clavien Mireille, Rachel C\^{e}tre, Branislav Ulicny, Pablo De Heras Ciechomski - *EPFL-VRLab*

In this cultural heritage project we provide the restitution of a Roman odeon (Aphrodisias) and its audience. The Odeon model is created with commercial software according to maps and archeological documentation. To create the audience crowd, we are using an intuitive authoring tool: characters are placed, modified and animated using a brush metaphor. A real-time crowd rendering engine is developed that handles 1000 humans or more.
ERATO = identification Evaluation and Revival of the Acoustical heritage of ancient Theatres and Odea INCO-MED.
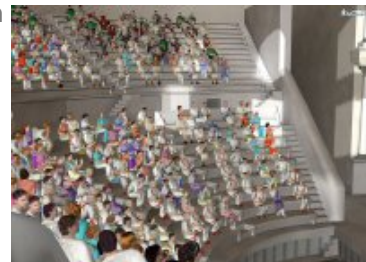
Fragmin Mode of Action Animation

Rajeev Doshi, Olaf Louwinger, Nick Dunster - *Skylight Creative Services*
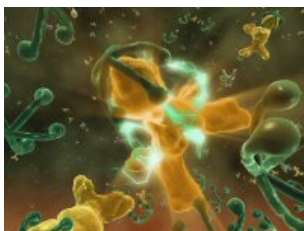
This project shows the process of fibrin blood clot (thrombus) formation in the body - a process exacerbated in patients with cancer. We then show how a pharmaceutical agent (Fragmin) can be used to alleviate and minimise the chance of this potentially life threatening condition from occuring. On a technical level, we tried to keep the animation very kinetic and utilised many techniques to help give a sense of the changing scale and locations - both in the visuals and audio.

The Journey

Digital Production Arts Students - *Clemson University*

The Journey is a provoking philosophy of man's life and the projection of his inner being. This animation begins with the figure of man descending from the heavens of nothingness into a simple city-scape, the stage of his progressed adulthood and emotional entrapment. There we follow him through a series of interactions with other characters, just like him, where instincts clash and conflicts rise. For the main character, the journey is futile, and in the end all fighting is as meaningless as the nothingness from which he fell. That is where our journey returns. Man with his encapsulating sphere of self, rise back into the nothingness, the spatially infinite nowhere.
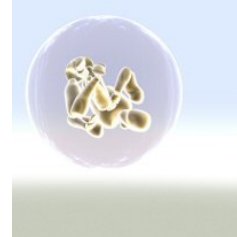
Garment Motion Capture Using Color-Coded Patterns

Volker Scholz, Timo Stich, *MPI Informatik*
Michael Keckeisen, Markus Wacker, *WSI/GRIS University of Tuebingen*
Marcus Magnor, *MPI Informatik*

We present a new image-based algorithm for surface reconstruction of moving garment from multiple calibrated video cameras. Using a color-coded cloth texture, we reliably match circular features between different camera views. As surface model we use an a priori known triangle mesh. By identifying the mesh vertices with texture elements we obtain a consistent parameterization of the surface over time without further processing. Missing data points resulting from self-shadowing are plausibly interpolated by minimizing a thin-plate functional. The deforming geometry can be used for different graphics applications, e.g. for realistic retexturing. We show results for real garments demonstrating the accuracy of the recovered flexible shape.

Demons Within

Digital Production Arts Students - *Clemson University*

The classic struggle between good and evil is given a new twist in this 'hand drawn comic book' come to life. Our hero follows a mysterious, powerful man into an abandoned warehouse, only to find himself caught up in memories of his own childhood, and a demonic showdown. Through extensive use of hand drawn textures, moody lighting, a driving musical score, choreographed motion capture and keyframing, this animation carefully maintains the look and feel of a comic book. Book-ended by actual comic panels to fill out the story and complement the CG, Demons Within brings to life the best of modern comic book art.

Mandala

Digital Production Arts Students - *Clemson University*
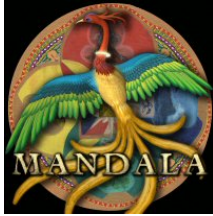
Mandala is the story of the creation of a universe as a metaphor for a single idea, from inspiration to actualization. Phoenix and its chromatic journey across the breathtaking landscape of the spirit represent the generative force of creation and the process of realization. Ultimately, we see that not only are other worlds being birthed at the same time, but in fact all are part of a whole. Colors, directions, and four natural elements synthesize into one dynamic experience of Mandala. The sands are scattered as the ongoing process of creation continues.

First Impressions

Digital Production Arts Students - *Clemson University*

What is the best way for a guy to approach a woman who's captured his interest? Does she like the romantic type? The rich type? The cute type? Maybe the best first impression anyone can make is just being himself. "First Impressions" features cloth and hair simulation, as well as subsurface scattering for rendered skin. Maya and Shake were used extensively throughout.
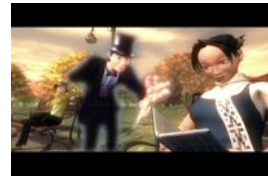
SAMULNORI

Ji-Young Choi, *Graduate School of Kyushu Institute of Design*
Etsuo Genda, Tatsuro Ishii, *Faculty of Design Kyushu University*

The purpose of this work is to digitally archive Samulnori, which is a traditional Korean dance, by creating a 3D animation. I used a 3D digitizer and motion capturing of traditional dancers to reproduce the action and form. Dancers played 4 different musical instruments and danced at the same time. In particular, the long ribbons attached to the tops of their heads move in a unique fashion. Using that movement as a base, I expressed Samulnori's artistic beauty by fusing it with abstract imagery.

Multidimensional Eye Virus 1.0

Wobbe F. Koning - *ideePIX*

Evolving kaleidoscopic shapes grow in multiple dimensions.
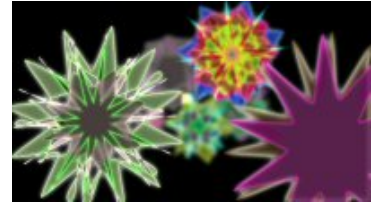
KOLOBOK

Michail Maximov - *Independent*

Ultra short, paradoxable and funny adventures of a strange unique creature named KOLOBOK. Concept of the storie based on the special body structure of this creature. KOLOBOK, a spherical object wich has a soft and defenceless body and hard, motley colorized cover with only one hole (see shots from pilot). The hole is unique... KOLOBOK used this hole for eating, breathing, making love and so on... The main concept included also KOLOBOK wild life observation... The image style of film done in hyper photorealistic and high detailed keys.

Grandmas' attic

Rodja Trappe, Manuel Becker, Pasqual Boehmsdorff, Stefan Bröhl, Lina Brühl, Jens Freiling, Andreas Langs, Paul Lemke, Michael Nikelsky, Ruth Recker, Christian Rieder, Eva Schmidt, Polina Smagina, Holger Stridde
University of Koblenz-Landau

Our short film shows a hopping lamp inspired by Luxo Jr. The character explores a dusty and dark attic. After an look round, it discovers a colored ball. It is impossible to reach, so a tool is required. This comes in form of a slingshot which is constructed out of a image, a postroll and a coke can. After the can hits the ball it unfortunatly bounces on the lamp and lands on a cupboard. The lamp does not give up keeps trying to get the ball by building up the slingshot again.

Space Cat

Digital Production Arts Students
Clemson University

The Continuing Adventures of Space Cat is a roller coaster ride through the space fantasy genre! With over-the-top action, larger than life characters, fun effects, and a rollicking, all original orchestral music score, Space Cat is sure to please any fan of space epic movies and vintage Saturday morning matinee serials. With suave heroes, vile enemies, cute defenseless citizens, and even a comic sidekick, Space Cat pays tongue-in-cheek homage to many a famous movie scene. This epic fiction, writ large across a backdrop as big as space itself, has all the fun and adventure one can squeeze in an animation short.... For more, you'll have to wait for the next installment of Space Cat!

## Living City: The Virtual Dublin Project

(in alphabetical order): Simon Dobbyn, John Hamill, Rachel McDonnell, Keith O'Conor, Carol O'Sullivan, John Ryan, *Trinity College Dublin*

The simulation of large crowds of humans is important in many fields of computer graphics, including real-time applications such as games, as they can breathe life into otherwise static scenes and enhance believability. We have developed a large-scale interactive model of Dublin city with crowds of humans using a novel hybrid rendering system. Our results demonstrate a system capable of rendering large realistic crowds of over 50,000 individuals on commodity PCs with the visual realism of a high-resolution geometry rendering system.

Ghost Recon 2 Commercial

Streamline Studios
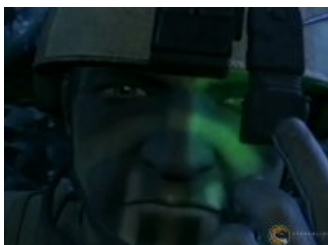
We were approached by Red Storm Entertainment to produce high end cinematics for the next installment of the Ghost Recon. In the trenches, and within a tight deadline, Streamline Studios was able to produce the cinematics with the help of Red Storm, but also take on the challenge of producing the TV commercial for Ubisoft. By far Ghost Recon 2 was the most challenging and difficult project to date, but also a milestone in the development of Streamline.

A Walk on Glass

Stefan Kimmerle, Simon Pabst, Egon Bachmann
University of Tübingen

This video is a demonstration of the Finite-Element TüTex cloth simulator developed at the University of Tübingen. The model was completely animated and modeled using Alias Maya while the dress was simulated using a plug-in of the TüTex simulator.

Cross Contours

Dennis Miller - *Northeastern University*

Cross Contours explores a variety of nearly identifiable icons and images and develops numerous associations among them. Though never crossing the line into the purely representational, it attempts to stimulate references and mappings in the viewer. The music adds an affective layer to the piece and helps control its dramatic development.