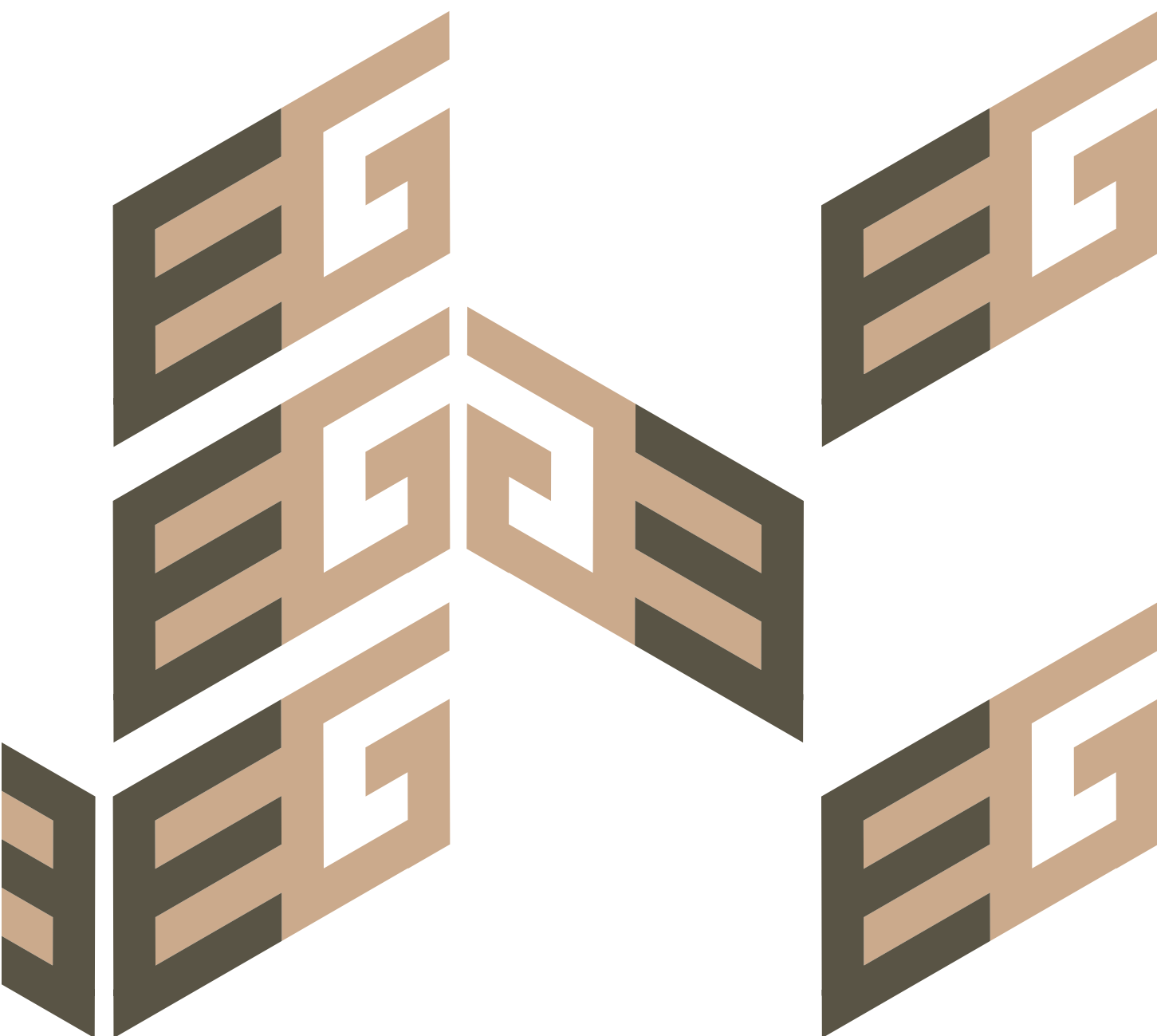


Eurographics 2011

LLANDUDNO UK

11-15 April 2011



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Eurographics

EUROPEAN ASSOCIATION FOR COMPUTER GRAPHICS



RIVIC

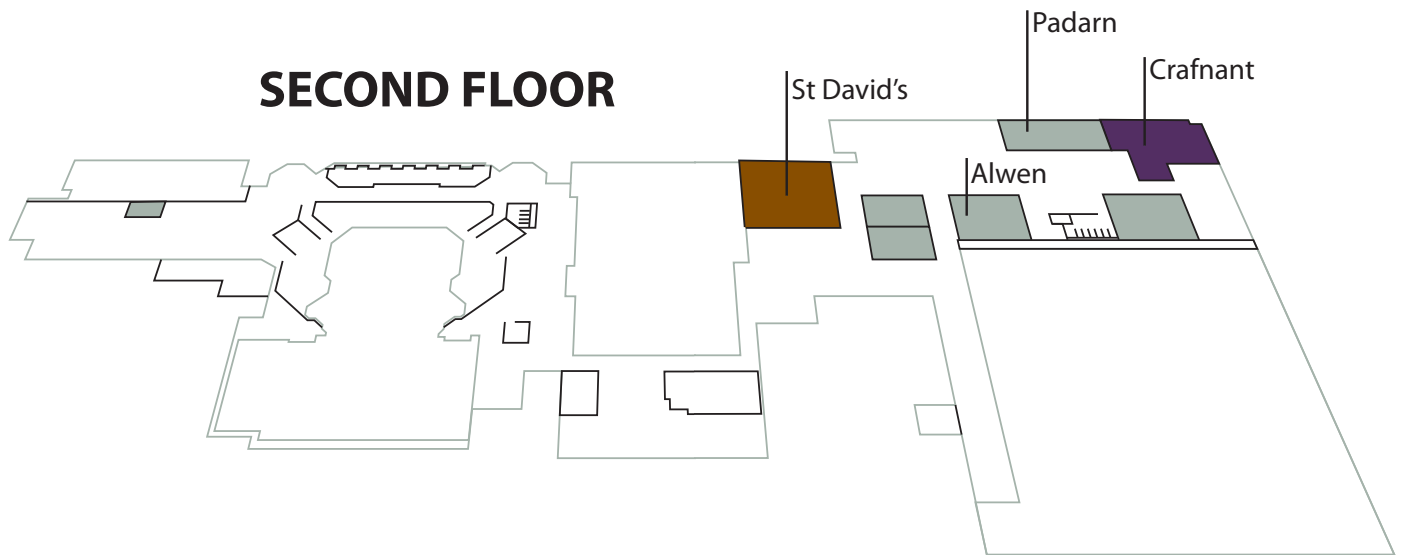
Research Institute of Visual Computing



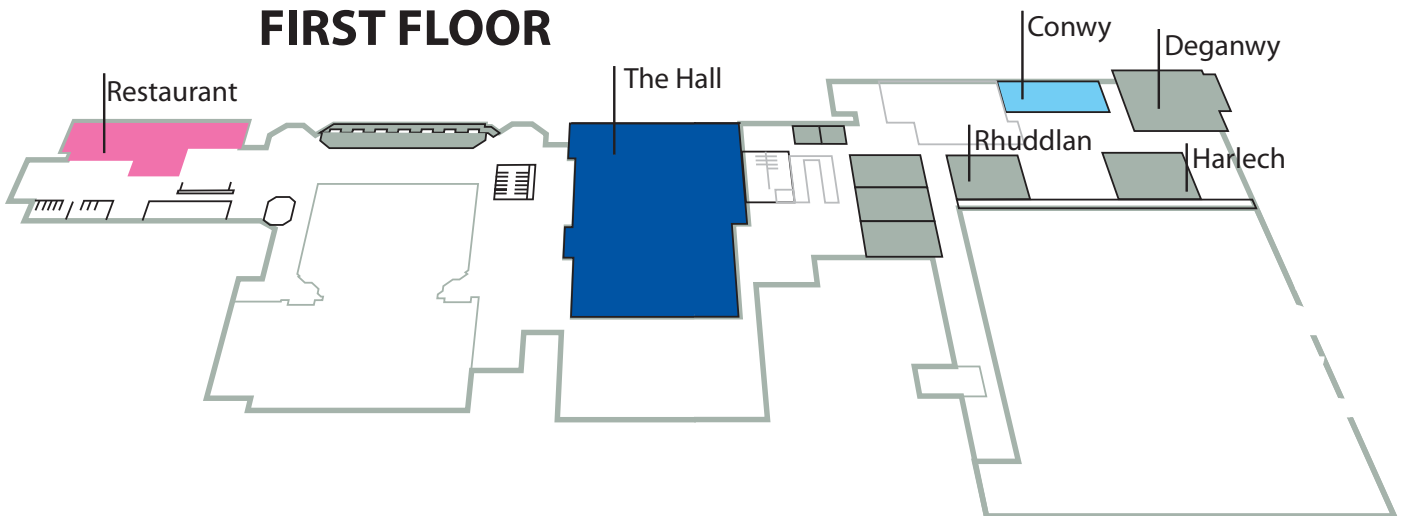
PRIFYSGOL
BANGOR
UNIVERSITY



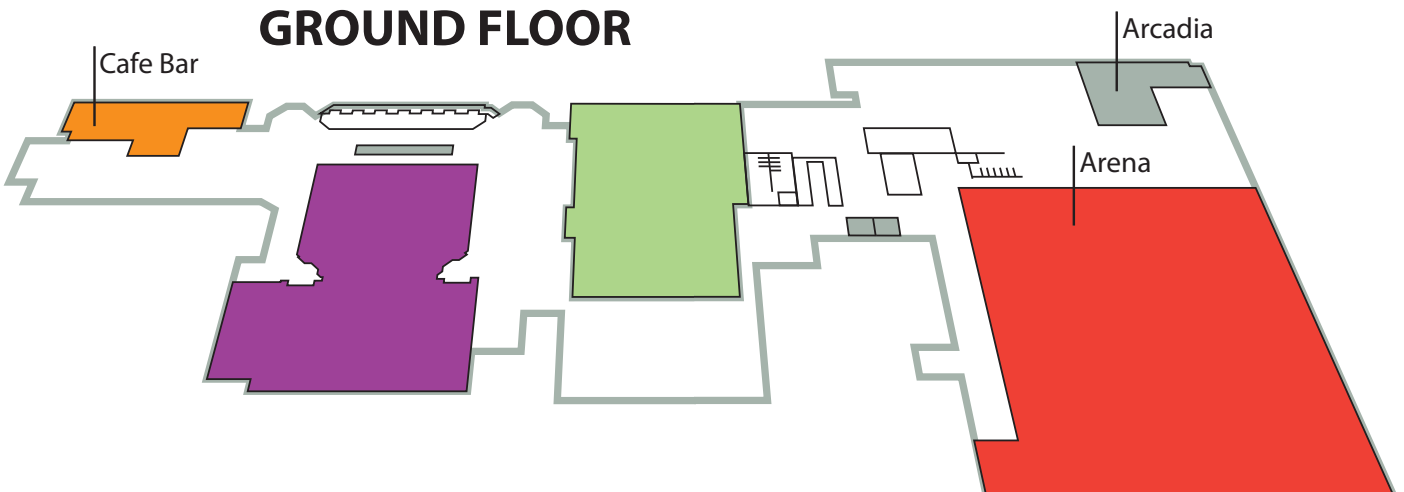
SECOND FLOOR



FIRST FLOOR



GROUND FLOOR



Welcome to EG2011/Croeso e EG2011

We would like to welcome you to Eurographics 2011. Eurographics 2011 is the 32nd annual conference of the European Association for Computer Graphics. The 2011 conference is being hosted by the Research Institute of Visual Computing (RIVIC), with local arrangements by the Visualization and Medical Graphics group at the School of Computer Science, Bangor University.

It is the first time that EG has been held in Wales (and hopefully not the last time that we will see EG here!). Wales, part of the United Kingdom, is a relatively small country in comparison to its neighbour, England. The capital of Wales is Cardiff which is in the South. In fact, the two main population areas are (i) the South, encapsulating Swansea and Cardiff, and (ii) North Wales. North Wales includes the city of Bangor, Anglesey (a 715km² Island off the North West Coast) and Llandudno. The terrain of Wales is mainly unspoilt rural and mountainous. Wales contains three of Britain's most famous National Parks: The Snowdonia National Park in North Wales; the Pembrokeshire Coast National Park in West Wales and The Brecon Beacons National Park in South Wales.

Research in Visual Computing has been growing exponentially in Wales. This is demonstrated through the creation of the Research Institute of Visual computing

(RIVIC) as well as other research institutes. It is thus a privilege to host EG2011 and thus it is an honour for us to welcome you to Wales and to the Eurographics 2011 conference.

We hope you enjoy this conference and that you manage to find some free time to visit our beautiful countryside. We have been planning this conference for two years and we take the opportunity to thank all those who have been involved and have given their time and effort to make this a success.

Hoffem eich croesawu i Eurographics 2011. EG2011 yw 32ain gynhadledd flynyddol y Gymdeithas Ewropeaidd ar gyfer Graffeg Gyfrifiadurol. Y Sefydliad Ymchwil i Gyfrifiadureg Weledol (RIVIC) sy'n cynnal y gynhadledd eleni, gyda threfniadau lleol dan ofal y Grŵp Delweddu Graffeg Feddygol yn Ysgol Cyfrifiadureg Prifysgol Bangor.

Mae ymchwil ym maes cyfrifiadureg weledol wedi tyfu'n aruthrol yng Nghymru. Mae creu'r Sefydliad Ymchwil i Gyfrifiadureg Weledol (RIVIC) a sefydliadau ymchwil eraill yn tystio i'r twf hwn. Mae'n ffraind cael cynnal EG2011 ac mae'n anrhydedd eich croesau i Gymru ac i gynhadledd Eurographics 2011.

CHAIRS/CADEIRYDDION

Jonathan C. Roberts

Eduard Gröller



Information at a glance

Plenary Sessions

- > Opening session, Tue 9am (Arena).
- > Keynotes:
 - Tues 9am, Thurs 4pm, Fri 11am (Arena)
- > Closing & Awards, Fri 12.30 (Arena)
- > Fast Forward: Every Full paper and Short paper in *"fast forward"* (Arena)

Paper Sessions:

- > Full papers , Tue-Fri (Arena, St David's)
- > CGF papers . Tue-Fri (St David's)

Lunches & Refreshments

- > All lunches and refreshments are included in the registration; served in The Hall.
 - Welcome refreshment 8:30
 - Morning coffee/tea 10:30
 - Lunches served from 12:30
 - Afternoon break 15:30

Keynotes

Kurt Akeley "Projection and Parallax", Tue 9:30
Frits H. Post "Data Visualization: Featuring Interactive Visual Analysis", Thurs 16:00
Guillaume Thierry "Neuromatrix: The world is embodied in our brain", Fri 11:00

Socials

- > Welcome Reception & Poster Party (The Hall), Tue 19.00. Light refreshments will be served.
- > Conference Dinner, Thurs evening at Bangor University. Coaches will leave Venue Cymru at 19.00, don't be late!

Posters

- > For presenters: Fix posters, on the boards, in the Hall by early Tue morning. Stand by posters during poster party; take posters down on Fri.
- > Welcome reception and poster party: Tue 19.00

Industrial Sessions

- > Wed 13th April 1pm, "Understanding POWERVR SGX Graphics Technology." Marco Weber, Imagination Technologies
- > Thurs 14 April 9am, "The Technology behind Water, Hair and Cloth on Tangled", Andrew Selle and Dmitriy Pinskiy, Walt Disney Animation Studios

Tutorials & Workshops

- > 3DOR, Sun (Deganwy)
- > ECPGV, Sun, Mon (St David's)
- > RIVIC, Sun (Crafnant)

Exhibition

- > The exhibition and book display will be Tue, Wed & Thurs in the entrance to Arena.

Wireless

- > An open wireless connection is available for your use.

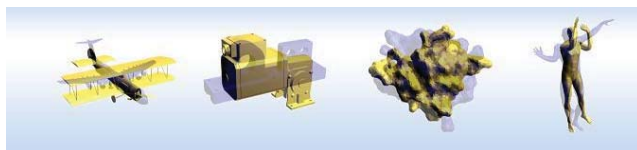
Return coach

- > Coaches will leave from Venue Cymru at 13:00 on Fri back to Liverpool and Manchester Airports.

Sunday - workshops & co-located events

Eurographics Workshop on 3D Object Retrieval - 3DOR (Deganwy)

The aim of this workshop is to stimulate researchers from different fields (computer vision, computer graphics, machine learning, human-computer interaction, semantic web) who work on the common goal of 3D object retrieval, to present state-of-the-art work in the field and thus provide a crossfertilization ground that will stimulate discussions on the next steps in this important research area.



Sunday

9:00 - 9:10: Opening & Keynote

18:00 - 18:30 - Discussion and closing.

19:00 - Workshop dinner.

Research Institute for Visual Computing, RIVIC Scientific Advisory Board (Crafnant)



RIVIC

Research Institute of Visual Computing

Sunday

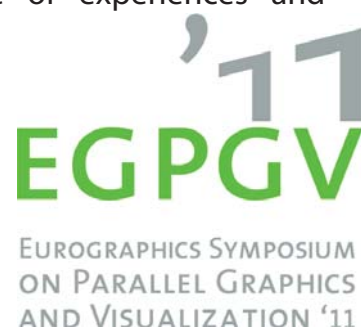
12.00 for 12.30 Start, with lunch

Programme ends at 18.00

Dinner from 19.00

Eurographics Symposium on Parallel Graphics and Visualization 2011 (St. David's)

EGPGV is the premier international event focusing on parallel graphics and visualization technology, where novel solutions exploiting and defining new trends in parallel hardware and software architectures are presented. The aim of the symposium is to strongly encourage exchange of experiences and knowledge in parallel and distributed visual computing and its application to all aspects of computer graphics and data visualization.



Sunday (day 1)

10:30 - 11:00 Coffee/Tea

11:00 - 11:30 Opening Session

16:00 - 17:00 Session 3 - Invited Talk, day end

19:00 - 22:00 Symposium Dinner

Monday (day 2)

09:30 - 10:30 Session start

15:00 - 15:30 Closing Session & Paper Award

15:30 - 16:00 Coffee/Tea, end of programme

Monday - Tutorials

(TUT1) Monday 9:00 full day, (Deganwy)

Computing Correspondences in Geometric Data Sets

Will Chang, Hao Li, Niloy Mitra, Mark Pauly, Szymon Rusinkiewicz, Michael Wand

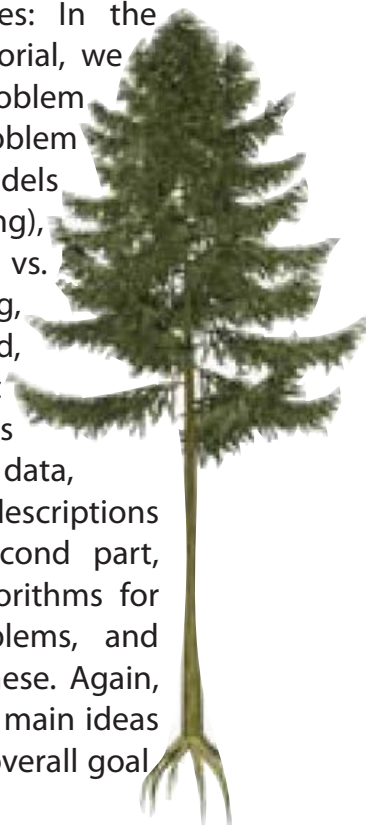
Shape registration and, more generally speaking, computing correspondence across shapes are fundamental problems in computer graphics and vision. Problems from this area show up in many different variants such as scan registration, deformable shape matching, animation reconstruction, or finding partial symmetries of objects. Computing correspondences is a main prerequisite for higher level shape processing algorithms, such as building statistical models, non-local denoising, or inverse procedural modeling. Our tutorial addresses correspondence problems in geometric shapes. We will look at the problem from two different perspectives: In the first part of our tutorial, we will motivate the problem and explain the problem structure (formal models for shape matching), its variants (partial vs. complete matching, deformable vs. rigid, etc) and specific challenges (such as noise, incomplete data, and statistical descriptions thereof). In the second part, we will look at algorithms for solving these problems, and at applications of these. Again, we will focus on the main ideas and principles. Our overall goal

is to give the attendee a “coordinate system” of the field, to convey the main problem structure and the main approaches to solve the problem, as well as open questions and research challenges. Topics covered will include rigid and deformable shape matching, local and global correspondence algorithms, as well as symmetry detection and applications.

Understand some Welsh Syllables...

The emphasis in Welsh is usually on the penultimate syllable, e.g., Llanberis (thlan-ber-ris) or Caernarfon (kyre-nar-von). Here are some of the key syllables:

C	as the k in ‘kick’
CH	as in the composor ‘Bach’
DD	pronounced TH (as in ‘breathe’)
LL	approximately pronounced THL, a softer form of ‘cl’ in the word ‘clan’.
F	as a V in English
FF	as an F in English, such as the word ‘off’
W	pronounced as English OO, such as ‘swoon’



Monday - Tutorials

(TUT2) Monday, 9:00 all morning, (Crafant) **Sketch Input of Engineering Solid Models**

Pedro Company, Peter Varley

In this tutorial, we describe the state of the art of sketch input of engineering solid models. The tutorial is in four parts. In the first part, we show how sketching has historically been an important aspect of engineering culture, and remains a useful tool in the early design phase as it has been demonstrated that sketching enhances creativity. We discuss and classify various current approaches to computer interpretation of sketches. We introduce the problem of deducing design intent, which we understand as a mix of geometry, psychology and engineering, and note how no existing approach to interpretation of sketches has considered the explicit capture of design intent from the input sketch. In the second

and third parts, we present our selection of the most important algorithms currently used for interpreting wireframe drawings (part two) and natural line drawings (part three) of engineering objects. In part two, the algorithms we look at are: for finding faces in wireframes; for inflating wireframes to 3D; and for processing rounds and fillets. In part three, we look at: line labelling; inflation to 2.5D; and deducing hidden topology. In part four, we discuss some of the most interesting open problems: making virtual paper and pencil more usable than actual paper and pencil; interpreting annotated engineering sketches; and creating assemblies from sketches.

(TUT3) Monday, 14:00 during afternoon, (Crafant) **Artistic Stylisation of Images and Video**

John Collomosse, Jan Eric Kyprianidis

The half-day tutorial provides an introduction to Non-Photorealistic Rendering (NPR), targeted at both students and experienced researchers of Computer Graphics who have not previously explored NPR in their work. The tutorial focuses on two-dimensional (2D) NPR, specifically the transformation of photos or videos into synthetic artwork (e.g. paintings or cartoons). Consequently the course will touch not only on computer graphics topics, but also on the image

processing and computer vision techniques that drive such algorithms. However the latter concepts will be introduced gently and no prior knowledge is assumed beyond a working knowledge of filtering and convolution operations. Some elements of the course will touch upon GPU implementation, but GPU concepts will be described at a high level of abstraction without need for detailed working knowledge of GPU programming.

Tuesday - Plenary (Arena)

(Opening Ceremony) 9:00 Welcome (Arena)

Opening Chair: Jonathan C. Roberts, Eduard Gröller

Welcome from The Vice Chancellor, Professor John Hughes, Bangor University

Chair of ceremony: Tom Ertl, Hans-Peter Seidel

Opening Ceremony and Awards and Announcement of Imagina competition.

(Keynote) 9:30 Kurt Akeley (Arena)

Projection and Parallax

Chair: Eduard Gröller

Projection and its time or spatially varying derivative, parallax, are a common thread through my work in computer graphics, stereoscopic display, human vision, and, most recently, light-field display and capture. In this talk I'll present insights, anecdotes, and epiphanies I've accumulated along the way.

(Fast Forward) 11:00-12:30 Hear the papers fast! (Arena)

All the Full papers and the Short papers will be presented by the authors in a continuous, non-stop entertaining way.

Chairs:

Full papers: Min Chen and Oliver Deussen

Short Papers: Nick Avis and Sylvain Lefebvre



J. E.
Kyprianidis
& H. Kang
/ Image
and Video
Abstraction
by
Coherence-

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Imagination

Tuesday - Full Papers

(FP1) 14:00 Natural Phenomena (Arena)

Chair: Bedřich Beneš

The Natural 3D Spiral

Gur Harary and Ayellet Tal [image]

Generalized Helicoids for Modeling Hair Geometry

Emmanuel Piuze, Paul G. Kry, and Kaleem Siddiqi

Fruit Senescence and Decay Simulation

Joseph T. Kider Jr., Samantha Raja, and Norman I. Badler



(FP2) 14:00 Shape Analysis (St. David's)

Chair: Marie-Paule Cani

Learning Line Features in 3D Geometry

Martin Sunkel, Silke Jansen, Michael Wand, Elmar Eisemann, and Hans-Peter Seidel

Shape Analysis with Subspace Symmetries

Alexander Berner, Michael Wand, Niloy J. Mitra, Daniel Mewes, and Hans-Peter Seidel [image]



Symmetry Hierarchy of Man-Made Objects

Yanzhen Wang, Kai Xu, Jun Li, Hao Zhang, Ariel Shamir, Ligang Liu, Zhi-Quan Cheng, and Y. Xiong

(FP3) 16:00 Ray Tracing (Arena)

Chair: Tom Ertl

RTSAH Traversal Order for Occlusion Rays

Thiago Ize and Charles Hansen [image]

Two-Level Grids for Ray Tracing on GPUs

Javor Kalojanov, Markus Billeter, and Philipp Slusallek

Combinatorial Bidirectional Path-Tracing for Efficient Hybrid CPU/GPU Rendering

Anthony Pajot, Loïc Barthe, Mathias Paulin, and Pierre Poulin



(CGF1) 16:00 Animation Models (St. David's)

Chair: Matthias Teschner

Creating and Animating Subject-specific Anatomical Models

B. Gilles, L. Revéret and D. K. Pai

Embedded Implicit Stand-ins for Animated Meshes: a Case of Hybrid Modelling

D. Kravtsov, O. Fryazinov, V. Adzhiev, A. Pasko and P. Comninos

Virtual Video Camera: Image-Based Viewpoint Navigation Through Space and Time

C. Lipski, C. Linz, K. Berger, A. Sellent and M. Magnor

Tuesday - Tutorials

(TUT4) Tuesday 14:00-15:30 quarter day, (Crafant) **(Bi)spectral Rendering in Practice**

Alexander Wilkie, Andrea Weidlich

Amongst graphics technologies, spectral rendering is something of a wallflower. Most engineers know that it exists, but few have actually used it in practice. And very probably, not that many graphics engineers could give an accurate assessment as to why this is so. Which is a bit odd, since if one considers the rationale behind the simulation of light transport (i.e. the physics background of computer graphics), spectral rendering should be a much more natural way of computing light-surface interactions than the colour-space computations that are standard practice in rendering these days.

And as current technology shows, spectral rendering is, in fact, really not required to achieve good results in a lot of common

usage scenarios. However, in some cases, it is really necessary - one of them being scenes in which fluorescent surfaces are present. Such usage scenarios, and their correct handling, are what this course is all about.

This course attempts to provide a comprehensive, stand-alone overview of this topic area, both in terms of when to use spectral rendering (the theoretical background presented should enable attendees to positively identify all usage cases that require spectral rendering), and how to do it from a technical perspective - including an overview of the design of an existing, complex bi-spectral rendering system.

(TUT5) Tuesday 16:00-17:30 quarter day, (Crafant) **Rendering with Layered Materials**

Alexander Wilkie, Andrea Weidlich

This course serves as a guide on the considerable potential of layered surface models. The key advantage of using such layered BRDFs over traditional, more general shading language constructs is that the end result is automatically highly physically plausible. However, this does not mean that these models cannot be used for artistic purposes. In particular, we demonstrate on a simple layered surface model that combines several traditional well known

BRDF components how a surprisingly large number of interesting and important surface types can be efficiently represented by using the same, not particularly complex, BRDF code. We also show how handy such an approach is for the eventual end user, whose main concern is the ease with which one can describe object appearance based only on a few intuitive parameters.

We first discuss layered surface models in general and the constraints of modelling

object appearance in a physically plausible fashion. We then demonstrate the techniques that can be used to efficiently evaluate layered BRDF models, both for high quality offline rendering as well as in a real-time setting before we give examples of the surface types that can be described

in this way and demonstrate how they can be created. We also go beyond plain surface models, and showcase how a texture-based combination of layered surface components can be used to describe highly complex object appearance attributes, while implicitly remaining physically plausible.

(TUT6) Tuesday 14:00 half day, (Rhuddlan) **Scientific Evaluation in Visualization**

Camilla Forsell and Matthew Cooper

The objective of this half-day introductory tutorial is to increase awareness of what constitutes a sound scientific approach to evaluation in Visualization and to provide basic theoretical knowledge of and practical skills in current research practice. The content presents the current challenges and trends related to how to characterize and optimize the complex interactive visual displays present in Visualization today. It will cover the most basic and relevant issues to consider during different phases of evaluation: planning, design, execution, analysis of results and reporting. The content outlines how to proceed to achieve high quality results and point out common pitfalls and mistakes which are threats to high quality results. The main focus is on quantitative experimental research but the general knowledge applies to all kinds of studies. The tutorial will present the main part of the content by means of a lecture style using power-point presentations, and will use example studies from the tutorial leaders' own publications as well as other relevant work. There will also



be demonstrations of different techniques for capturing data during an evaluation study. The participants will be given the opportunity to try out some of these methods hands-on to further facilitate a discussion of their potential suitability for different kinds of studies. Taking part in this tutorial will not train a novice participant to be fully capable of designing and conducting an evaluation study and analyzing its outcome, such a goal would require a substantially larger course. The aim is to introduce the topic, provide a general knowledge about what is important to consider and what resources are available to guide them in further study in this area. Further, participants will also learn to better judge the relevance and quality of a publication presenting an evaluation when reviewing such work since the same rules apply.

Tuesday - Areas/Heritage

(Areas Heritage) 14:00 Tue Heritage Session A (Deganwy)

Chair: Andy Day

High Quality tactile paintings

Andreas Reichinger, Stefan Maierhofer and Werner Purgathofer

Multispectral Image Matting of Ancient Chinese Paintings

Jiawan Zhang, Yi Zhang, Shengping Zhang and Lixia Yan

Learning How to Match Fresco Fragments

Funkhouser Thomas, Hijung Shin, Corey Toler-Franklin, Antonio Garcia Castaneda, Benedict Brown, David Dobkin and Szymon Rusinkiewicz

For Poster Presenters:

Please make sure your poster is fixed to the board by early Tuesday morning and before the first plenary session. We advice that posters are put up as soon as you arrive for the main conference. Please take them down on Friday.

(Areas Heritage) 16:00 Tue Heritage Session B (Deganwy)

Chair: Roberto Scopigno

Streaming Framework for Seamless Detailed Photo Blending on Massive Point Clouds

Ruggero Pintus, Enrico Gobbetti and Marco Callieri

Relightable Buildings from Images

Francho Melendez, Mashhuda Glencross, Greg Ward and Roger Hubbard [image]

Using Procedural Modeling as a Framework for Representing Style: An Example from regency Architecture

Erica Calogero, David Arnold, Nick Tyson and David Morris

Rendering Interior Cultural Heritage Scenes Using Image Based Shooting

Jassim Happa, Thomas Bashford-Rogers, Kurt Debattista, Alan Chalmers



(Reception) Tuesday 19:00, (The Hall) Welcome Reception & Poster Party

The Eurographics 2011 "Welcome Reception and Poster Session" will take place on Tuesday the 12th April 2011. Drinks and a light meal will be served. This reception is included in all packages except the Tutorials only package. Extra tickets can be purchased at a cost of €25 through the online conference registration and pre-registration of additional attendees is required.

Architectural Styles Dependent Shape Grammar Representation of Facades

E. Duskova and J. Zara

Four Virtual Reality Simulations for Teaching Earth Sciences

Alejandro Aguilar-Sierra and René Garduño-López

The Langweil Model of Prague - a Challenge for State-of-the-art 3D Reconstruction Techniques

D. Sedlacek and J. Zara

Reconstruction of Cultural Heritage Object Utilizing its Paper Model for Augmented Reality

Zuzana Haladova

Concept of Skeleton Texture Mapping

Martin Madaras

GPU Based On-the-fly Light Emission-absorption Approximation for Direct Multi-volume Rendering

Rostislav Khlebnikov, Bernhard Kainz, Bernhard Roth, Judith Muehl and Dieter Schmalstieg

Design and Implementation of a System for Interactive Higher Dimensional Vector Field Visualization

Zhenmin Peng, Zhao Geng and Robert S. Laramée

Application of Active Appearance Model to Automatic Face Replacement

Dinesh Govindaraj

Visual Analysis of Hierarchical Management Data

Zhao Geng, Gaurav Gathania, Robert S. Laramée, and ZhenMin Peng

Synesthetic Sound-Color Cross-Modality in Animations

D. Cai, S. Goto, J. P. Wang, N. Asai, N. Nagata, A. Fukumoto, and J. Kurumizawa

The Worst View for Virtual Museum Presentation

I. Varhanikova and A. Ferko

High Performance Interactive Painting On The GPU

M. Großer and M. Wacker

Visualising Semantic Pathways in Document Collections

C. Rowland and J. Anderson

Improving BVH Ray Tracing Speed Using the AVX Instruction Set

Attila T. Áfra

User Manual on Augmented Reality for Installation and Maintenance of the V-Brakes System of a Mountain Bike

Jorge Martín-Gutiérrez and Manuel Contero

Procedural Generation of Infinite Cities

Jiri Danihelka and Jiri Zara

AA Patterns

Abdalla G. M. Ahmed

LiveLayer – Live Traffic Projection onto Maps

Simon Walton, Min Chen and David Ebert

From Video to Animated 3D Reconstruction: A Computer Graphics Application for Snooker Skills Training

P. A. Legg, M. L. Parry, D. H. S. Chung, M. R. Jiang, A. Morris, I. W. Griffiths, D. Marshall, and M. Chen

Methodologies for Connected Structured Idealized Ice Crystal Growth Models

Yousef El-Alem and Jonathan C. Roberts

Image-based Retexturing of Deformed Surfaces from a Single Image

A. Hilsmann, D. C. Schneider, and P. Eisert

Accelerated 5D Ray Tree construction on the GPU

Ravi P. Kammaje and Benjamin Mora

Using Visualisation Techniques and Molecular Dynamics to Study Atoms Diffusing in Glass

E. Flikkema, Z. Zhou, and G. N. Greaves

Using a Kinect Interface to Develop an Interactive 3D Tabletop Display

Llyr ap Cenydd, Chris J. Hughes, Rick Walker and Jonathan C. Roberts

Wednesday - Full Papers

(FP4) 9:00 Procedural Modelling (Arena)

Chair: Holger Theisel

Guided Procedural Modeling

Bedrich Beneš, Ondrej Št'ava, Radomir Mech, and Gavin Miller

Procedural Modeling of Interconnected Structures

Lars Krecklau and Leif Kobbelt

Interactive Modeling of City Layouts using Layers of Procedural Content

Markus Lipp, Daniel Scherzer, Peter Wonka, and Michael Wimmer

(FP5) 11:00 Mesh Processing (Arena)

Chair: Renato Pajarola

SQuad: Compact Representation for Triangle Meshes

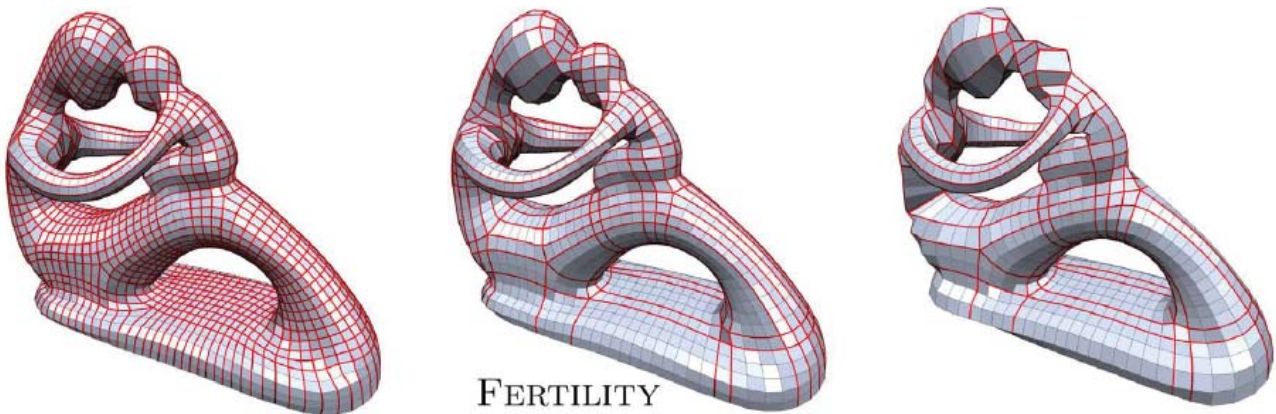
Topraj Gurung, Daniel Laney, Peter Lindstrom, and Jarek Rossignac

Discovery of Intrinsic Primitives on Triangle Meshes

Justin Solomon, Mirela Ben-Chen, Adrian Butscher, and Leonidas Guibas

Global Structure Optimization of Quadrilateral Meshes

David Bommes, Timm Lempfer, and Leif Kobbelt [image]



(FP7) 14:00 Motion Capture, Simulation and Manipulation (Arena)

Chair: Brian Wyvill

Comprehensive Facial Performance Capture

Graham Fyffe, Tim Hawkins, Chris Watts, Wan-Chun Ma, and Paul Debevec

Langevin Particle: A Self-Adaptive Lagrangian Primitive for Flow Simulation Enhancement

Fan Chen, Ye Zhao, and Zhi Yuan

Deformable Motion: Squeezing into Cluttered Environments

Myung Geol Choi, Manmyung Kim, Kyung Lyul Hyun, and Jehee Lee

(FP9) 16:00 Surface Appearance (Arena)

Chair: Tim Weyrich

BSSRDF Estimation from Single Images

Adolfo Munoz, Jose I. Echevarria, Francisco J. Seron, Jorge Lopez-Moreno, Mashhuda Glencross, and Diego Gutierrez

A Sparse Parametric Mixture Model for BTF Compression, Editing and Rendering

Hongzhi Wu, Julie Dorsey, and Holly Rushmeier

Dynamic Display of BRDFs

Matthias B. Hullin, Hendrik P. A. Lensch, Ramesh Raskar, Hans-Peter Seidel, and Ivo Ihrke

Pronounce some names

Llandudno: thl-an-did-no

Deganwy: de-gan-wee

Rhuddlan: rith-lan

Croeso: croyso

Cymru: cym-ri



	Sunday 10th			Monday 11th				Tuesday 12th				
	Deganwy	St. David's	Crafnant	Deganwy	Crafnant	St. David's	Rhuddlan	Arena	St. David's	Deganwy	Crafnant	Rhuddlan
9.00	3DOR	EGPGV		TUT1	TUT2	EGPGV	EXEC	Opening Ceremony				
9.30								Kurt Akeley Keynote 1				
10.00												
10.30												
11.00	3DOR	EGPGV		TUT1	TUT2	EGPGV	EXEC	Awards				
11.30												
12.00			RIVIC					Fast Forward				
12.30												
13.00												
13.30												
14.00	3DOR	EGPGV	RIVIC	TUT1	TUT3	EGPGV	EXEC	FP1	FP2	Area	TUT4	TUT6
14.30												
15.00												
15.30												
16.00	3DOR	EGPGV	RIVIC	TUT1	TUT3	EGPGV	EXEC	FP3	CGF1	Area	TUT5	TUT6
16.30												
17.00												
17.30												
18.00												
18.30												
19.00							Fellows Dinner	Welcome Reception Poster Party				
19.30												
20.00												



Wednesday 13th

Arena	St. David's	Deganwy	Crafnant	Rhuddlan
FP4	CGF2	STAR 1	ED 1	SP 1

FP5	FP6	STAR 2	ED 2	SP 2
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	IND			
FP7	FP8	STAR 3	ED 3	AreaHDR

FP9	CGF3	STAR 4	ED 4	AreaHDR
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Thursday 14th

Arena	St. David's	Crafnant	Rhuddlan
FP10	CGF4	IND	SP 3

FP11	FP12	STAR 5	SP 4
------	------	--------	------

FP13	CGF5	STAR 6	SP 5
------	------	--------	------

Frits Post Keynote 2
Eurographics General Assembly
Conference Dinner at Bangor University

Friday 15th

Arena	St. David's	Deganwy	Crafnant
FP14	CGF6	STAR 7	Med Prize

Guillaume Thierry Keynote 3	
Closing Remarks & Awards	
Coaches for Airports	
Coach Liverpool	Coach Manches

Wednesday - Full Papers / CGF

(CGF2) 9:00 Creative Graphics, (St David's)

Chair: Pierre Poulin

Generating Classic Mosaics with Graph Cuts

Y. Liu, O. Veksler and O. Juan

Binary Shading using Appearance and Geometry

Bert Buchholz, Tamy Boubekeur, Doug DeCarlo and Marc Alexa

An Eyeglass Simulator Using Conoid Tracing

M. Kakimoto, T. Tatsukawa and T. Nishita

(FP6) 11:00 Quality and Scalability, (St David's)

Chair: Olga Sorkine

Wavelet Rasterization

Josiah Manson and Scott Schaefer [image]

Freehand HDR Imaging of Moving Scenes with Simultaneous Resolution Enhancement

Henning Zimmer, Andrés Bruhn, and Joachim Weickert

Scalable Remote Rendering with Depth and Motion-flow Augmented Streaming

Dawid Paja, Robert Herzog, Elmar Eisemann, Karol Myszkowski and Hans-Peter Seidel



Industrial Session

(IND) 13:00 Industrial Session (St David's)

"Understanding POWERVR SGX Graphics Technology."
by Marco Weber, Imagination Technologies

Chair: Robert Gittins

FP8 (CGF) 14:00 Surface Formation & Enhancement (St David's)

Chair: Leif Kobbelt

Contouring Discrete Indicator Functions

Josiah Manson, Jason Smith and Scott Schaefer

Surface Reconstruction Based on Hierarchical Floating Radial Basis Functions

J. Süßmuth, Q. Meyer and G. Greiner

Adaptive and Feature-Preserving Subdivision for High-Quality Tetrahedral Meshes

D. Burkhart, B. Hamann and G. Umlauf

(CGF3) 16:00 Visualization (St David's)

Chair: Chuck Hansen

A Smoke Visualization Model for Capturing Surface-like Features

Jinho Park, Yeongho Seol, Frederic Cordier
and Junyong Noh

Time-Dependent 2D Vector Field Topology: An Approach Inspired by Lagrangian Coherent Structures

F. Sadlo and D. Weiskopf

CheckViz : Sanity Check and Topological Clues for Linear

and Nonlinear Mappings

Sylvain Lespinats and Michael Aupetit

Useful Welsh Phrases

Welcome: Croeso

How are you? S'mae

Good morning: Bore da

Good night: Nos da

Thank you: Diolch

Thank you very much:
Diolch yn fawr

Happy Easter: Pasg Hapus

Help, the graphics card is
overheating!

Help, mae'r cardyn
graffeg yn gorboethi!

Wednesday - State of the Art Reports

(STAR 1) 9:00 A Survey on Video-based Graphics and Video Visualization (Deganwy). Chair Bryan Wyvill

Rita Borgo¹, Min Chen¹, Edward Grundy, Ben Daubney¹, Gunther Heidemann², Benjamin Höferlin², Markus Höferlin², Heike Jänicke³, Daniel Weiskopf², Xianghua Xie¹

¹Swansea University, ²Universität Stuttgart, ³Heidelberg University

In recent years, a collection of new techniques, which deal with videos as the input data, emerged in computer graphics and visualization. In this survey, we report the state of the art in video-based graphics and video visualization. We provide a comprehensive review of techniques for making photo-realistic or artistic computer-generated imagery from videos, as well as methods for creating summary and/or abstract visual representations to reveal

important features and events in videos. We propose a new taxonomy to categorize the concepts and techniques in this newly-emerged body of knowledge. To support this review, we also give a concise overview of the major advances in automated video analysis, as some techniques in this field (e.g., feature extraction, detection, tracking and so on) have been featured in video-based modeling and rendering pipelines for graphics and visualization.

(STAR 2) 11:00 Computational Plenoptic Imaging (Deganwy)

Chair: Terry Hewitt

Gordon Wetzstein¹, Ivo Ihrke², Douglas Lanman³, Wolfgang Heidrich¹

¹University of British Columbia, ²Universität des Saarlandes / MPI Informatik,

³MIT Media Lab

The plenoptic function is a ray-based model for light that includes the color spectrum as well as spatial, temporal, and directional variation. Although digital light sensors have greatly evolved in the last years, one fundamental limitation remains: all standard CCD and CMOS sensors integrate over the dimensions of the plenoptic function as they convert photons into electrons; in the

process, all visual information is irreversibly lost, except for a two-dimensional, spatially-varying subset — the common photograph. In this state of the art report, we review approaches that optically encode the dimensions of the plenoptic function transcending those captured by traditional photography and reconstruct the recorded information computationally.



(STAR 3) 14:00 Visualization for the Physical Sciences (Deganwy)

Chair: David Duce

Dan R. Lipsa¹, Robert S. Laramée¹, Simon J. Cox², Jonathan C. Roberts³, Rick Walker³
Swansea University, ²Aberystwyth University, ³Bangor University

Close collaboration with other scientific fields is seen as an important goal for the visualization community by leading researchers in visualization. Yet, engaging in a scientific collaboration can be challenging. Physical sciences, with its array of research directions, provide many exciting challenges for a visualization scientist which in turn create ample possibilities for collaboration. We present the first survey of its kind that provides a comprehensive view on existing work on visualization for the physical

sciences. We introduce a novel classification scheme based on application area, data dimensionality and main challenge addressed and apply this classification scheme to each contribution from the literature. Our classification highlights mature areas in visualization for the physical sciences and suggests directions for future work. Our survey serves as a useful starting point for those interested in visualization for the physical sciences, namely astronomy, chemistry, earth sciences and physics.

(STAR 4) 16:00 Believable Virtual Characters in Human-Computer Dialogs (Deganwy).

Chair: Nigel John

Yvonne Jung¹, Arjan Kuijper¹, Deiter W. Fellner², Michael Kipp³, Jan Miksatko³, Jonathan Gratch⁴, Daniel Thalmann⁵

¹Fraunhofer IGD, ²Fraunhofer IGD, TU Darmstadt, ³DFKI, Saarbrücken, ⁴Institute for Creative Technologies, University of Southern California, ⁵Institute for Media Innovation, NTU, Singapore

For many application areas, where a task is most naturally represented by talking or where standard input devices are difficult to use or not available at all, virtual characters can be well suited as an intuitive man-machine-interface due to their inherent ability to simulate verbal as well as nonverbal communicative behavior. This type of interface is made possible with the help of multimodal dialog systems, which extend common speech dialog systems with additional modalities just like in human-human interaction. Multimodal dialog systems consist at least of an auditive and graphical component, and communication is based on speech and nonverbal communication alike. However, employing virtual characters as personal and believable dialog partners in multimodal dialogs entails

several challenges, because this requires not only a reliable and consistent motion and dialog behavior but also regarding nonverbal communication and affective components. Besides modeling the “mind” and creating intelligent communication behavior on the encoding side, which is an active field of research in artificial intelligence, the visual representation of a character including its perceivable behavior, from a decoding perspective, such as facial expressions and gestures, belongs to the domain of computer graphics and likewise implicates many open issues concerning natural communication. Therefore, in this report we give a comprehensive overview how to go from communication models to actual animation and rendering.

Wednesday - Education Papers

(ED1) 9:00 Education session A, (Crafnant)

Chair: Steve Maddock

The Art and Science of Digital Production Arts

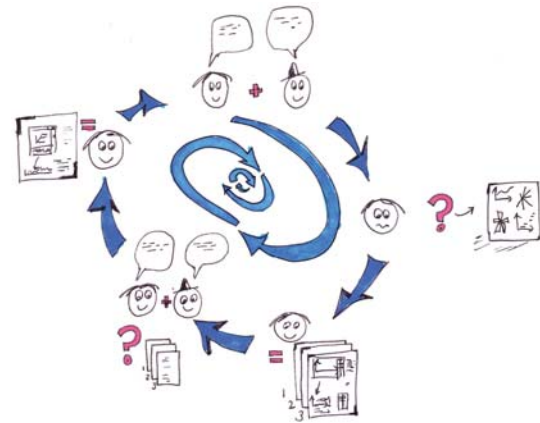
Tim A. Davis and Donald H. House

PhD Education Through Apprenticeship

Daniel Patel, M. Eduard Gröller and Stefan Bruckner

The Five Design-Sheet (FdS) approach for Sketching Information Visualization Designs

Jonathan C. Roberts [image]



(ED2) 11:00 Panel 1: “The education of Visual Analytics and Visual Computing” (Crafnant)

Chair: Jonathan C. Roberts

Panelists include:

Eben Muse, Deputy Head, School of Creative Studies, Bangor University.

Jiawan Zhang, Executive Vice Dean, Nat. Pilot School of Computer Software, Tianjin University

Kai Xu, Senior Lecturer in visual analytics, Sch. Engineering & Information Sciences, Middlesex University.

With the growth of Visual Analytics throughout the US and Europe, there is a definite need to teach the skills needed. The expansion and growth of the Visual Analytics Science and Technology Conference in America, and the EuroVA conference, as well as the development of the NVACs, UK-VAC and the recent VisMaster EU network all point to a continued growth in Visual Analytics.

Alongside this is the growth of Forensic Computing degrees in Europe and centres for E-crime and Security. But, what should we teach? How can the qualifications be multi-disciplinary? What should be in a VA Masters course? How can we develop VA further? Is it suitable to develop an undergraduate degree in VA?



5 things to do before you leave Llandudno

- 1. Walk on Llandudno Pier.** Just a short distance away from Venue Cymru
- 2. Go up the Great Orme,** the mountain in Llandudno. Either take the Tramway or the Cable Car up the Great Orme.
- 3. Go shopping and buy some Welsh Cakes (picau ar y maen).** The Welsh 'drop scones' that are traditionally made on a griddle (a bakestone or 'maen' in Welsh)
- 4. Visit The Great Orme Mines,** and learn about copper mining in the past.
- 5. Try to pronounce the longest placename in Europe.**

(ED4) 16:00

Panel 2: "How should we teach CG?" (Crafnant)

Chair: Jean-Jacques Bourdin

Panelists include:

Eike Falk Anderson (Senior Lecturer in Computer Games Technology Faculty of Engineering and Computing, Coventry University).

Timothy A. Davis Associate Professor (School of Computing Clemson University)

Attribution: Chris McKenna

(ED3) 14:00

Education session A, (Crafnant)

Chair: Joaquim Jorge

High-Level Application Development for non-Computer Science majors using Image Processing

Shesh Amit

In at the Deep End: An Activity-Led Introduction to Creative Computing with Interactive Computer Graphics

Eike Falk Anderson, Christopher E. Peters, Fotis Liarokapis and John Halloran

Interdisciplinary game projects: opening the Graphics (back) door with the soft skills key

Rafae Bidarra

Computer Graphics Education is changing. Our students are changing. The curricula are changing. Even with an optimistic view one can see that in these changes not everything is positive. The purpose of this panel is to discuss whether or not our role as teachers of computer graphics is changing and what we can do to ensure changes produce improvements.



Wednesday - Short Presentation

(SP1) 9:00 Deforming (Rhuddlan)

Chair: Nick Avis

Feature-Based Mesh Editing

Qingnan Zhou, Tino Weinkauff, Olga Sorkine

Volumetric plastic deformation

Francisco J. R. Prados, Alejandro J. León Salas and Juan Carlos Torres

Collision-Driven Volumetric Deformation on the GPU

Garrett Aldrich, Dmitriy Pinskiy and Bernd Hamann

(SP2) 11:00 Light, Shadow, and the Eye (Rhuddlan)

Chair: Jacco Bikker

An Error Bound for Decoupled Visibility with Application to Relighting

Karsten Schwenk, Johannes Behr and Dieter Fellner

Separable Approximation of Ambient Occlusion

Jing Huang, Tamy Boubekeur, Tobias Ritschel, Matthias Holländer and Elmar Eisemann

Improving Shadow Map Filtering with Statistical Analysis

Jesus Gumbau, László Szirmay-Kalos, Mateu Sbert and Miguel Chover Sellés

Realistic Simulation of the Human Vision Using An Accurate Eye Model

Jiaze Wu, Changwen Zheng, Xiaohui Hu and Fanjiang Xu

The Red Dragon, Y Ddraig Goch, is the famous emblem of Wales and appears on the national flag. On the occasion of the first ever visit of the Eurographics conference to this country we are pleased to release this high resolution 3D mesh of the Welsh Dragon into the public domain for use in your research. Our hope is that you will use this model during the conference to help demonstrate your latest research ideas. If used in any publications, please acknowledge "The Welsh Dragon mesh model was released by Bangor University, UK, for Eurographics 2011".

The Welsh Dragon is the cousin of the Phlegmatic Dragon, that was released to the community at EG 2007 in Prague.



Wednesday - Area/HDR

(Area - HDR 1) 14:00 Session A (Rhuddlan)

Chair: Rafal Mantiuk

Enhancement of Low Dynamic Range Videos using High Dynamic Range Backgrounds

Francesco Banterle, Matteo Dellepiane and Roberto Scopigno,

Avoiding Chromaticity Creep with PseudoGrey

Ian Grimstead, Nick Avis

Synthesizing Relative Radiance for Realistic Rendering of Virtual Objects in 3D Photo Collections

Konrad Kölzer and Frank Nagl

Photographically Guided Alignment for HDR Images

Ahmet Oguz Akyuz

(Area - HDR 2) 16:00 Session A (Rhuddlan)

Chair: Erik Reinhard

Towards Mobile HDR Video

Tassio Knop de Castro, Alexandre Chapiro, Marcelo Cicconet and Luiz Velho

HDR Photographic Pipeline for Camera Modules in Mobile Devices

Radosław Mantiuk, Miłosław Smyk

Thursday - Full Papers

(FP10) 9:00 Intelligent Graphics (Arena)

Chair: Diego Gutierrez

Computer-Suggested Facial Makeup

Kristina Scherbaum, Tobias Ritschel, Matthias Hullin, Thorsten Thormählen, Volker Blanz and Hans-Peter Seidel

Predicted Virtual Soft Shadow Maps with High Quality Filtering

Li Shen, Gaël Guennebaud, Baoguang Yang and Jieqing Feng

Goal-based Caustics

Marios Papas, Wojciech Jarosz, Wenzel Jakob, Szymon Rusinkiewicz, Wojciech Matusik and Tim Weyrich

(FP11) 11:00 Non-Photorealistic Rendering (Arena)

Chair: Pascal Barla

Implicit Brushes for Stylized Line-based Rendering

Romain Vergne, David Vanderhaeghe, Jiazhou Chen, Pascal Barla, Xavier Granier, and Christophe Schlick

Estimating Color and Texture Parameters for Vector Graphics

Stefan Jeschke, David Cline and Peter Wonka

Hatching for Motion Picture Production

Tamás Umenhoffer, László Szécsi and László Szirmay-Kalos

(FP13) 14:00 Image and Video (Arena)

Chair: Peter Hall

Blur-Aware Image Downsampling

Matthew Trentacoste, Rafał Mantiuk, and Wolfgang Heidrich

Image Retargeting Quality Assessment

Yong-Jin Liu, Xi Luo, Yu-Ming Xuan, Wen-Feng Chen and Xiao-Lan Fu

Image and Video Abstraction by Coherence-Enhancing Filtering

Jan Eric Kyprianidis and Henry Kang

Thursday - CGF/Full Papers

(CGF4) 9:00 Realism and Perception (St. David's)

Chair: Michael Wand

High-Quality Screen-Space Ambient Occlusion using Temporal Coherence

Oliver Mattausch, Daniel Scherzer and Michael Wimmer

Progressive Point-Light-Based Global Illumination

H. Dammertz, A. Keller and H. P. A. Lensch

Free Path Sampling in High Resolution Inhomogeneous Participating Media

László Szirmay-Kalos, Balazs Toth and Milan Magdics

(FP12) 11:00 Shape Matching and Manipulation

(St. David's) Chair: Fabio Pellacini

Intrinsic Shape Matching by Planned Landmark Sampling

Art Tevs, Alexander Berner, Michael Wand, Ivo Ihrke and Hans-Peter Seidel

Prior Knowledge for Part Correspondence

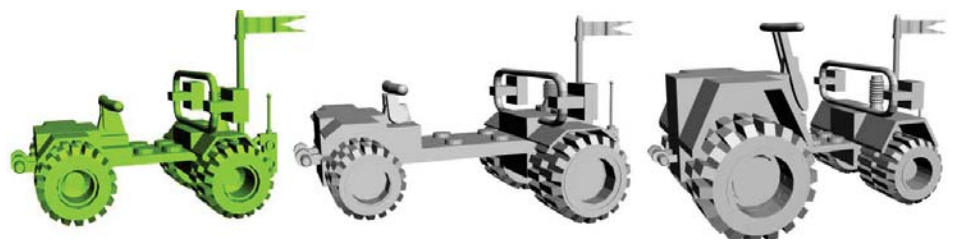
Oliver van Kaick, Andrea Tagliasacchi, Oana Sidi, Hao Zhang, Daniel Cohen-Or, Lior Wolf and Ghassan Hamarneh

Component-wise Controllers for Structure-Preserving Shape Manipulation

Youyi Zheng, Hongbo Fu, Daniel Cohen-Or, Oscar Kin-Chung Au and Chiew-Lan Tai

[image]

(CGF5) 14:00 Beyond Triangular Meshes (St. David's)



Chair: Pere Brunet

Meshless Shape and Motion Design for Multiple Deformable Objects

B. Adams, M. Wicke, M. Ovsjanikov, M. Wand, H.-P. Seidel and L.J. Guibas

Generalized Use of Non-Terminal Symbols for Procedural Modeling

L. Krecklau, D. Pavic and L. Kobbelt

Hybrid Booleans

D.Pavić, M. Campen and L. Kobbelt

Thursday - Industrial session / STARs

Industrial Session

(IND) 9:00 Industrial Session (Crafnant)

The Technology behind Water, Hair and Cloth on Tangled.

by Andrew Selle and Dmitriy Pinskiy, Walt Disney Animation Studios

Chair: Nigel John

(STAR 5) 11:00 A Survey on Temporal Coherence Methods in Real-Time Rendering (Crafnant). Chair: Bryan Wyvill

Daniel Scherzer¹, Lei Yang², Oliver Mattausch³, Diego Nehab⁴, Pedro Sander², Michael Wimmer³, Elmar Eisemann⁴

¹LBI for Virtual Archaeology, ²Hong Kong University of Science and Technology,

³Vienna University of Technology, ⁴Telecom ParisTech / CNRS LTCI

Nowadays, there is a strong trend towards rendering to higher-resolution displays and at high frame rates. This development aims at delivering more detail and better accuracy, but it also comes at a significant cost ... The underlying observation is that a higher resolution and frame rate do not necessarily imply a much higher workload, but a larger

amount of redundancy and a higher potential for amortizing rendering over several frames. In this STAR, we will investigate methods that make use of this principle and provide practical and theoretical advice on how to exploit temporal coherence for performance optimization.

(STAR 6) 14:00 Interactive Character Animation using Simulated Physics (Crafnant).

Chair: Nigel John

Thomas Geijtenbeek¹, Nicolas Pronost¹, Arjan Egges¹, Mark Overmars¹

¹Utrecht University

Physics simulation offers the possibility of truly responsive and realistic animation. Despite wide adoption of physics simulation for the animation of passive phenomena, commercial applications still resort to kinematics based approaches for the animation of actively controlled characters. In recent years, however, research on interactive character animation using simulated physics

has resulted in tremendous improvements in controllability, efficiency, flexibility and visual fidelity. In this review, we present a structured evaluation of relevant aspects, approaches and techniques regarding interactive character animation using simulated physics, based on over two decades of research. We conclude by pointing out some open research areas and possible future directions.

Thursday - Short Papers

(SP3) 9:00 Reconstructing (Rhuddlan)

Chair: Michael Wimmer

Efficient Feature-preserving Local Projection Operator for Geometry Reconstruction

Bin Liao, Chunxia Xiao and Liqiang Jin

Reconstructing Buildings as Textured Low Poly Meshes from Point Clouds and Images

Irene Reisner-Kollmann, Christian Luksch and Michael Schwärzler

Folded Paper Geometry from 2D Pattern and 3D Contour

Damien Rohmer, Marie-Paule Cani, Stefanie Hahmann and Boris Thibert

(SP4) 11:00 Motion, video and streams (Rhuddlan)

Chair: Ian Grimstead

Warp-based motion compensation for endoscopic kymography

David C. Schneider, Anna Hilsmann and Peter Eisert

Motion Capture Data Completion and Denoising by Singular Value Thresholding

Ranch Y.Q. Lai, Pong Chi Yuen and Kelvin K.W. Lee

Skimming Video Action Using Annotated 3D Surfaces

Ben Falchuk, Chung-Ying Wu, Tarek El-Gaaly and Akshay Vashist

Automatic Stream Surface Seeding

Matt Edmunds, Tony McLoughlin, Robert S. Laramée, Eugene Guoning and Nelson Max

(SP5) 14:00 Simulation on the GPU and textures (Rhuddlan)

Chair: Vlastimil Havran

Fast Hydraulic and Thermal Erosion on GPU

Balázs Jákó and Balázs Tóth

Crystal Scattering Simulation for PET on the GPU

Milán Magdics and László Szirmay-Kalos

Alpha Compression with Variable Data Formats

Yifei Jiang, Mindan Gui, Shuai Chen and Weiwu Hu

Enhancing Image-Based Aging Approaches

Olivier Clément and Eric Paquette

(Keynote) 16:00 Frits H. Post **Data Visualization: Featuring Interactive Visual Analysis** **(Arena). Chair: Jonathan C. Roberts**

Data visualization is an application-driven field that is always trying to satisfy its customers and to adapt to the demands, cultures, and workflows of many application areas. Therefore, it is difficult to keep focus on techniques and approaches that are not too application specific. In this talk, I will briefly review some current trends and issues, and identify some approaches that are common to many applications. One such approach is the detection of salient features, or patterns of interest in a data set. Another generic approach in data visualization is called interactive visual analysis (IVA), consisting of a strongly interactive multiple-linked-view interfaces with integrated, powerful data analysis techniques taken from statistical

analysis, pattern recognition, machine learning, and other fields. The high-level features are usually highly application specific, and can only be found using theories from the application domains. The big challenge is to create environments for general purpose visual data analysis, and yet allow users to introduce advanced theories and methods from many application domains. The trend towards more integration in data visualization will be illustrated with cross-links between very different areas, such as medical and flow visualization, and the combined use of techniques from scientific visualization and information visualization, and the absorption of other data analysis techniques.

(General Assembly) 17:30 (Arena)

Chair: Thomas Ertl

(Conference Dinner) Coaches leave 19:00 from Venue Cymru

The Eurographics 2011 Conference Dinner will take place in the evening of Thursday the 14th April. This event is included in all packages except the Tutorials only package. Extra tickets can be purchased at a cost of €60, through the online conference registration, and pre-registration of additional attendees is required.

The coach will pick up from outside Venue Cymru at 19:00. Don't be late. The conference dinner will take place at Bangor University in the Pritchard Jones hall. You will experience a traditional Welsh evening, featuring sumptuous Welsh food and drink, a traditional Welsh Male-Voice choir, exhibitions and other musical entertainment. You will be given the opportunity to sing with the Welsh Male Voice Choir - a chance of a life time, so get practising! Coaches will depart from Bangor at 10.30.

Dirk Bartz Prize for Visual Computing in Medicine

The Eurographics Association organizes a biannual competition to acknowledge the contribution that computer graphics is playing in the medical field, and to encourage further development.

In 2011 the Eurographics Medical Prize has been renamed to Dirk Bartz Prize for Visual Computing in Medicine to honor Dirk Bartz who passed away far too early in March the same year. Dirk was a highly recognized and enthusiastic scientist, teacher and promoter of Visual Computing in Medicine, an active member of the Eurographics Association, and Chair of the EG Medical Prizes 2007 and 2009.

This publication presents the work of the winners of the first Dirk Bartz Prize for Visual Computing in Medicine 2011, which is the fifth Eurographics Medical Prize competition since 2003. The papers are archived in the Eurographics Digital Library and are considered a peer reviewed publication.

The three winning contributions and the two honorable mentions were selected from 18 high-quality submissions. The winners receive their prize certificates in the EG 2011 award ceremony on Tuesday, April 12, 2011, and they will present their work during the Medical Prize session on Friday, April 15, 2011. We would like to thank all participating teams for their high-level contributions, the Prize Committee, Stefanie Behnke, the EG Support Team, and the local organizing staff at Bangor University. We hope that you will enjoy this year's Medical Prize program and we look forward to seeing you all in Llandudno.

Anna Vilanova and Katja Bühler

Joint First Prize:

The Tumor Therapy Manager and its Clinical Impact

Ivo Rössling, Jana Dornheim, Lars Dornheim, Andreas Boehm and Bernhard Preim

A Virtual Environment for Radiotherapy Training and Education - VERT

James W. Ward, R. Phillips, Annette Boejen, Cai Grau, Deepak Jois and Andy W. Beavis

Third Prize

AVM-Explorer: Multi-Volume Visualization of Vascular Structures for Planning of Cerebral AVM Surgery

Florian Weiler, Christian Rieder, C. A. David, C. Wald and Horst K. Hahn

Honorable Mention:

Interactive Visualization Techniques for Neurosurgery Planning

Stefan Diepenbrock, Jörg-Stefan Praßni, Florian Lindemann, Hans-Werner Bothe, and Timo Ropinski

FEMONUM: A Framework for Whole Body Pregnant Woman Modeling from Ante-Natal Imaging Data

Juan Pablo de la Plata Alcalde, Jérémie Anquez, Lazar Bibin, Tamy Boubekeur, Elsa Angelini and Isabelle Bloch

Friday - Full Papers / CGF

(FP14) 9:00 Interactive Geometric Processing (Arena)

Chair: Alexander Wilkie

Paint Mesh Cutting

Lubin Fan, Ligang Liu, and Kun Liu

GeoBrush: Interactive Mesh Geometry Cloning

Kenshi Takayama, Ryan Schmidt, Karan Singh, Takeo Igarashi, Tamy Boubekour, Olga Sorkine

Walking On Broken Mesh: Defect-Tolerant Geodesic Distances and Parameterizations

Marcel Campen and Leif Kobbelt

(CGF6) 9:00 Graphical Imagery and Displays (St David's)

Chair: Elmar Eisemann

Reducing Plenoptic Camera Artifacts

T. Georgiev and A. Lumsdaine

Tone Mapping Operators on Small Screen Devices: an Evaluation Study

C. Urbano, L. Magalhães, J. Moura, M. Bessa, A. Marcos and A. Chalmers

Optical Image Processing Using Light Modulation Displays

Gordon Wetzstein, Wolfgang Heidrich and David Luebke

(Med Prize) 9:00 Dirk Bartz Prize for Visual Computing in Medicine (Crafnant). Chair: Katja Bühler, Anna Vilanova

(STAR 7) 9:00 Acoustic Rendering and Auditory-Visual Cross-Modal Perception and Interaction (Deganwy).

Chair: Terry Hewitt

Vedad Hulusic¹, Carlo Harvey¹, Nicolas Tsingos², Kurt Debattista¹, Steve Walker³, David Howard⁴, Alan Chalmers¹

¹University of Warwick, ²Dolby Laboratories USA, ³Arup UK, ⁴University of York

In recent years research in the 3-Dimensional sound generation field has been primarily focussed upon new applications of spatialised sound. In the computer graphics community the use of such techniques is

most commonly found being applied to virtual, immersive environments. However, the field is more varied and diverse than this and other research tackles the problem in a more complete, and computationally

Friday - STAR, Plenary

expensive manner. However, simulation of light and sound wave propagation is still unachievable at a physically accurate spatio-temporal quality in real-time. Although the Human Visual System (HVS) and the Human Auditory System (HAS) are exceptionally sophisticated, they also contain certain perceptual and attentional limitations. Researchers in psychology have been investigating these limitations for several

years and have come up with some findings which may be exploited in other fields. This STAR provides a comprehensive overview of the major techniques for generating spatialised sound and, in addition, discusses perceptual and cross-modal influences to consider. We also describe current limitations and provide an in-depth look at the emerging topics in the field.

(Keynote) 11:00 Guillaume Thierry, **Neuromatrix: The world is embodied in our brain (Arena)**

Chair: Nigel John

Our brain is an interpreter, probably the most powerful ever conceived by Nature. However, just like every interpreter, it is limited and sometimes it can get things wrong. Most of us take it for granted that what we touch, hear, see, taste and smell is “reality”. But this reality is an illusion, a construct, which only exists in our brain, that is, a mental representation. Indeed, what if we could perceive infrared radiations like Cobras or Predator? What if we could see in very low light like cats? What if we could smell people and foods hidden from view 500 yards away? Surely “reality” would feel much different to us if our sensors and

brain were able to extract and process such information from the external world. Even more puzzling is the fact that our senses can betray us completely. This is what happens when we see things that are not there or, on the contrary, when we do not see things that are before our eyes. During this lecture, I will attempt to show how the world is embodied in our brain by looking at examples of interactive visual illusions, by showing the power of attention in defining what we see in the world around us, and by introducing patients with brain lesions or mental illness who perceive the world differently.

(Closing Remarks & Awards) 12:30 (Arena)

Chair: Jonathan C. Roberts

László Szirmay-Kalos Presentation
of best paper awards
Presentation of EG2012

Coaches will leave from Venue Cymru at 13:00 on Friday, at the end of the conference to go back to Liverpool and Manchester airports.

This transport is included with your registration fee, but please make sure you have registered beforehand.

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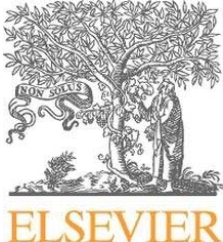
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Dirk Bartz Prize for visual Computing in Medicine



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