University of Hertfordshire

G+VERL

Games & Visual Effects Research Lab

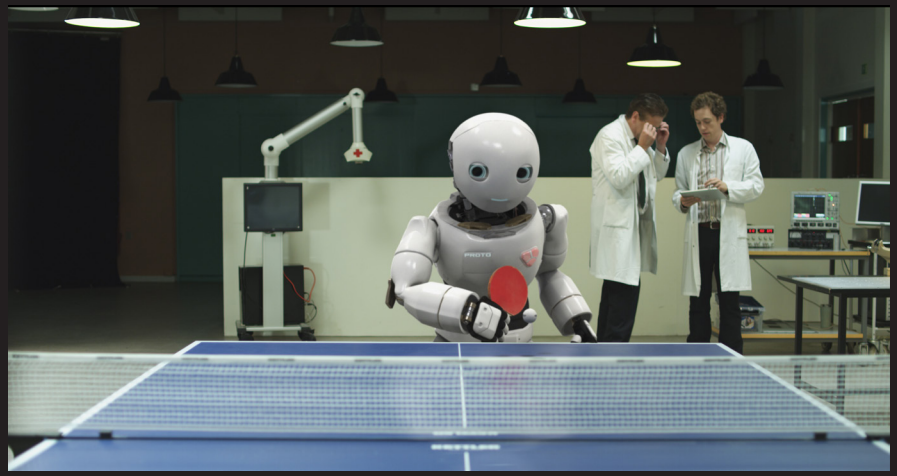
Convivium & Launch Event, Friday 16 January 2015

School of Creative Arts

About G+VERL

The Games & Visual Effects Research Lab at the University of Hertfordshire is a lab dedicated to investigating new and novel applications for the techniques and technologies of Visual Effects and Games. G+VERL's unique environment offers teams of multi-disciplinary researchers state-of-the-art computing technology to help facilitate and increase research and development for the VFX and games Industries.

G+VERL is part of the University of Hertfordshire Creative Economy Research Centre (CERC), a multi-disciplinary centre of excellence for research, and for business and social engagement, in the creative industries and the broader creative economy.



G+VERL Convivium & Launch Event

Friday January 16 2015
12.30pm – 7.30pm

Room B05, Film, Music & Media Building,
University of Hertfordshire, College Lane,
Hatfield, Hertfordshire AL10 9AB

Programme

12.30pm	**Lunch**
1.15pm	**Welcome** Judy Glasman – Dean, School of Creative Arts Peter Richardson – Director, G+VERL
1.30pm	**Keynote: Chris Roland**
2.00pm	**Paper Presentations** David Tree Mark Wallman Doros Polydorou
3.00pm	**Afternoon Tea**
3.30pm	**Keynote: Stefan Müller Arisona**
4.00pm	**Paper Presentations** Jodi Nelson Neil Gallagher Daniel Goodbury Ian Willcock
5.00pm	**Closing Remarks** Peter Richardson
5.15pm	**Virtual VJ Presentation (TV Studio)** Steve Gibson
5.45pm	**Drinks/Exhibition/Networking**

Keynote Speaker

Professor Chris Rowland

Chair of 3D Visualisation
Director of 3DVisLab
Duncan of Jordanstone College of Art and Design
University of Dundee

Abstract
Shipwrecks: Visualising Disasters at Sea

The seabed is littered with shipwrecks. This evidence of human exploration reveals our maritime cultural heritage. Using recent technological advances we can now create accurate 3D images of wrecks and other sub-sea objects to help with salvage, environmental clean-up and maritime archaeology. Examples include: HMS Royal Oak and the Costa Concordia.

Biography
Chris graduated in Fine Art before moving to a career in 3D animation and CG for television.

His research interests developed more fully after drifting into the University sector at Glasgow School of Art's Digital Design Studio. Working as a lecturer and researcher he then migrated to setup the 3D research facility at DJCAD, University of Dundee where he now leads the 3D Visualisation Research Lab.

Project themes include detecting terrorist activity, medical visualisation and subsea imaging research.

Keynote Speaker

Professor Stefan Müller Arisona

Principal Investigator, Professor of Computer Science, University of Applied Sciences and Arts Northwestern Switzerland FHNW

Abstract
The rapid technological evolution in digital media and game production, and in computer-based engineering and science demands highly sophisticated tools. These tools must optimise and shorten workflows and provide means for efficient handling of vast multi-dimensional and dynamic data sets. My research focuses on the construction of interactive instruments for digital art, entertainment, design, and scientific applications. This presentation will illustrate some of my work by the example of *CityEngine*, a procedural modelling tool for urban environments, originally developed by *Procedural Inc.*, and now part of Esri's *ArcGIS*. Since 2008, *CityEngine* has found its way into major movie and game studios and urban design and architecture companies use it for planning applications. The presentation will highlight the basic principles behind *CityEngine*, and discuss the pros and cons of using generative tools. The discussion will be accompanied by work carried out at ETH Zurich's *Future Cities Laboratory* in Singapore, and by a interactive digital art installation, *the Fingerprint City*, which was exhibited at the Ars Electronica Center in Linz, Austria from 2009 – 2012.

Biography
Stefan Müller Arisona is professor of computer science at FHNW and principal investigator at ETH Zurich, Switzerland. His main interests are the application of computer graphics, digital media, and human-computer interaction principles to a variety of fields such as architectural and urban modelling, digital art and entertainment, or digital media authoring. Stefan graduated in electrical engineering at ETH Zurich, completed his PhD at the University of Zurich in 2004, and was a Swiss NSF fellow at the University of California, Santa Barbara from 2007 - 2008.
Website: www.robotized.arisona.ch

Convivium Speaker

David Tree

Technical Director, G+VERL

Abstract

Hack and Slash: An artist friendly integration of physical based shading models for game engine pipelines.

The research detailed in this paper explores existing models for the representation of real-world materials utilising computer graphics through a study of surface shaders, specifically concentrating on those used within the context of real-time rendering.

Computer Graphics have been striving towards better photorealism since the introduction of the first surface shaders in 1973. This has been propagated by the availability of high-powered consumer graphics hardware. This has made previously unviable physically based rendering techniques accessible to real-time engines.

The initial stages of this research involved a review of the existing surface shaders. To perform a qualitative analysis, each shader was reproduced within the same game engine utilising a uniform lighting configuration to ensure a fair test.

The results of the testing phase were that the majority of the shading models reserved for offline rendering could now be made available using existing game engine technology with minimal effect on playable frame rates. I have concluded the study by presenting a series of node-based workflows implementing physical based materials within Epic Games' Unreal Development Kit.

Biography

As technical director of G+VERL David has been involved with the G+VERL project since its inception designing and specifying the equipment provision. The primary focus for his research is video games shader technology with a view to making advanced techniques accessible to artists.

Convivium Speaker

Mark Wallman

Senior Lecturer, Visual Effects

Abstract

To Infinity and Beyond.

This paper examines the development of rendering techniques. I start by reviewing early attempts at simulating reality and go on to map the progression of rendering techniques up to the present day, with a particular focus on current developments in the field. Topics covered include AOV creation, linear light/textures and sRGB. I conclude with an analysis of future trends in rendering and review the skills that a new generation of CG lighting artists will require to succeed in this rapidly changing industry.

Biography

Mark Wallman is Senior Lecturer and Award Leader in Visual Effects at the University of Hertfordshire. Mark has developed a VFX curriculum which closely connects to the commercial world. His research interests in VFX are informed by sixteen years of high-end work in the UK sector. His current research investigates new and novel rendering technologies such as Arnold Render and their method of deployment within post-production facilities such as Framestore and The Mill.

Particular areas of interest include digital cinematography, VFX for independent and mainstream feature films and animation performance.

Mark has developed an interest in muscle simulation for CGI characters. Recent work uses FACS to blend shapes to drive facial animation performances. He has also worked closely with palaeontologists to better understand the anatomy of movement and bone structure.

Convivium Speaker

Dr. Doros Polydorou

Programme Leader of Creative Media and Digital Cultures Programme

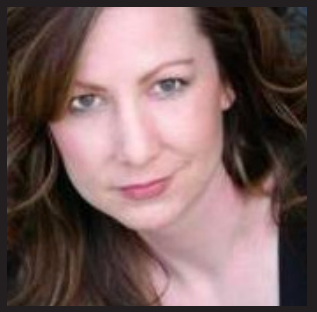
Abstract

This paper proposes an investigation into tactile communication by using a wearable haptic system. This work envisions a way to create a corporeal link between two dance performers, by giving them a sixth sense, the ability to become aware of each other's feelings and actions in space. This project aims to offer dancers a new way of communication possible only through the use of technology. Furthermore, by using a combination of real time generated visuals and projection mapped 3D graphics, the actions and feelings will be visualised and projected on the stage adding towards the spectacle of the performance.

Biography

Doros Polydorou is a creative coder with a keen interest in technological embodiment. He has done extensive work with visual toolkits, game engines, arduino boards, wireless sensors and camera vision systems. Throughout his past work, he has collaborated with dancers, live music composers, costume designers, stage designers and an assemble of other visual artists. Doros is currently the programme leader of Creative Media and Digital Cultures Programme at the University of Hertfordshire.

Convivium Speaker



Dr. Jodi Nelson

Research Fellow for the Creative Economy Research Centre (CERC)

Abstract

What challenges are involved in demonstrating the impact of interactive storytelling within documentary filmmaking as an agent for social change?

This paper proposes how the new paradigm shifts in digital technology and the democratization of the filmmaking process allows filmmakers to connect to a global niche audience with more immediacy. Through interactive, immersion and connected storytelling, filmmakers are connecting to global audiences and creating opportunities for interface, engagement, UX and audience reception due to the nature of new technological interfaces specifically within interactive documentary storytelling.

Biography

Nelson has recently completed a PhD in Critical and Creative Practice in Film & Media at the University of Sussex in Brighton. Her research interests are primarily focused in practice methodologies in interactive, digital technologies in filmmaking and how its creative outputs can further be developed within the growing Creative Economy sector. Additionally, what means through engagement of technology and social media, mobile apps and digital tools are available to reach participants and audiences through multiple devices and platforms for UX, transmedia and interactive modalities.
She is also an active filmmaker, actress and creative consultant in film and the creative economies under her company BNDmand, as well as a consultant/trainer for the British Council's Researcher Connect.

Convivium Speaker

Neil Gallagher

Course Leader, MA Games Art
Senior Lecturer, BA 3D Animation and Games Art
Deputy Director, G+VERL

Abstract
Research focused on exploration of the public understanding of physio-pharmacological phenomena through visualisation. A 3D prototype has been built on real time games engine technology. The emphasis of the research can be used in the medical context, by professionals to explain illnesses and treatments to patients and their carers, or in a more general context by the public to help aid their understanding of medical vernacular through an interactive and exploratory method. Being able to see inside a 3D simulated human body could help the public relate to the damaging health related effects of issues such as obesity, heart disease, cancer, heavy drinking, AIDS, smoking and poor life style choices.

Biography
Neil Gallagher – Senior Lecturer in Games and 3D Animation at the University of Hertfordshire teaching on the BA & MA Games Art course. He is a prolific and innovative computer Games Artist/Creator and Designer. He has worked in the past as an employee for Nintendo and Microsoft and has worked with Sony across various titles. He has around twenty years in the games industry and explored visual effect industry in Soho for a couple of years in which time he won The Cannes Lions International Advertising Festival, Winning the Cyber Category. He has gained international recognition as a leading expert in the field of experimental digital games and new media. The games he has worked on have sold well over 15 million units. He enjoys working on grass roots projects such as the Redbull Racing Virtual Reality. Currently he is actively exploring a new portfolio based around exploring alternative uses for real time rendering in the Automotive, Architectural, Medical and Astronomical subject areas using various technologies. He is currently developing a game using the Unreal 4 engine based on the book, Wind in the Willows.

Convivium Speaker

Daniel Goodbrey

Senior Lecturer in Narrative & Interaction Design

Abstract
There has long been a shared history of visual influence and narrative crossover between comics and videogames. Taking this history into account, this paper provides a critical examination of the newly emergent medium of game comics. A game comic can be defined as a game that takes the underlying structure and language of comics as the basis for its gameplay. The paper presents a case study on three prototype game comics that were created as a practice-led inquiry into the potential of the form. The study draws ideas from comics, games and new media theory. It uses these ideas to examine changes in the aesthetic experience of the comic form that have resulted from digital remediation. In this manner the paper provides a critically grounded exploration and analysis of how the medium of comics can be adapted via hybridisation with the ludic qualities of the videogame.

Biography
A digital comics pioneer, Daniel's current research focuses on the hybridisation of comics, videogames and 3D space.

Convivium Speaker

Dr. Ian Willcock

Programme Leader, Postgraduate Media
Principal Lecturer in Interactive Media

Abstract

The paper begins by considering the relative lack of emphasis on context (other than that of the technical means of production) in much contemporary Digital Art. For many works, there is no context other than that provided by the technical means of its presentation – the type of device or computer that it requires to be presented. Other than this, the work is often the same in any part of the world, at any time and for any viewer. As an artist interested in social process, this placing of artefacts and experiences outside of some of the usual means for developing cultural meaning and reference is troubling and unsatisfactory (although the point is made that successful works do not necessarily require contextual content to produce a satisfying user experience).

The author then explores what 'context' might constitute for digital art works and how context might be generated and validated in a post-physical age (referencing Walter Benjamin's ideas about reproduction and authenticity and also considering Philip Auslander's taxonomy of live performance).

After this theoretical discussion, the paper then uses the provisional conclusions about the possible nature(s) of digital context to examine ways that increasing access to semantically tagged networked data might allow artists to produce works which embody social (and other contexts) in ways that other, physically based, genres take for granted. Semantic tagging as a context-producing mechanism is examined and ideas about future web and knowledge developments by Tim Berners-Lee and Pierre Levy are explored as potential avenues for generating resources for digital artists.

Special Event: Virtual VJ

Dr. Steve Gibson

Interactive Media Artist, Interface Designer, Electronic Musician and Media Curator

Biography

Steve Gibson is an interactive media artist, interface designer, electronic musician and media curator. He completed his Ph.D. at SUNY Buffalo, where he studied music composition with Louis Andriessen. He currently serves as Reader in Innovative Digital Media at Northumbria University, Newcastle, UK. He was curator for the Media Art event Interactive Futures from 2002-07.

Simultaneously deeply involved with technology and deeply suspicious of its effects, Gibson's work celebrates both the liberation and paranoia of techno-fetishism. Influenced by a diverse body of art and popular movements, his practice-based work fuses immersive art, audio-visual performance and DIY design. He works in a range of media: from live electronic music, to game art, to virtual reality installation.

Steve Gibson's works have been exhibited in such venues as: Ars Electronica; the Whitney Museum of American Art; Banff Centre for the Arts; Digital Art Weeks; the European Media Arts Festival; ISEA; Cabaret Voltaire, Zurich; the San Francisco Art Institute; 4 & 6CyberConf. His work has been published internationally by Leonardo Electronic Almanac, St. Martin's Press, The MIT Press, New World Perspectives, Turnaround Productions, Future Publications, Urra Apogeo, and Passagen Verlag.

Exhibition Programme

Time Channel
Birgitta Hosea

PULse 03: HDVD
(Human Digital Video Device)
Interactive video installation
Lorna Moore

Image from *PULse 02*

Hack and Slash (demo)
David Tree

You. Here. Now.
Interactive installation
Ian Willcock

Virtual VJ
Steve Gibson
Stefan Müller Arisona

Forest of Light
Interactive installation
Freddie Gerrard-Abbott
Chen Yifeng
Tan Soon Chean
Roel Coucke

Director, G+VERL

Peter Richardson

Professor of Film

Biography

Peter Richardson is Professor of Film and Director of the Games and Visual Effects Research Lab in the School of Creative Arts at the University of Hertfordshire and is a co-founder of the newly established Creative Economy Research Centre.

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