

VS-Games 2016

7-9 September, Barcelona, Spain



Centre adscrit a:

UNIVERSITAT DE
BARCELONA



IEEE

Conference Programme

Welcome!

It my pleasure to welcome you all to Barcelona, and the 8th International Conference on Virtual Worlds and Games for Serious Applications. The VS-Games series is going from strength to strength, and for the 2016 edition we are delighted to be able to present 16 full papers, and 35 short papers and posters. We are also extremely pleased to have three fantastic keynote speakers this year, Brian Goldiez, from the University of Central Florida, USA, Jordi Martín, from Ubisoft Mobile Barcelona, and Tony Brooks, from Aalborg University, Denmark.

That game-based technologies have found a place in the wider world (beyond interactive entertainment) is now beyond question, with topics such as gamification and interactive storytelling becoming accepted in many application fields. Our aim for the 2016 conference is to continue the series' overall goals of developing and nurturing theoretical and academic rigour in the discussion of serious games and virtual worlds. I believe that, with the high quality of the submissions and accepted papers, we will achieved that aim.

I would like to thank our main sponsors, ENTI-University of Barcelona. ENTI is a new university dedicated to driving education and research in the field of digital entertainment, and thus is good match for the VS-Games conference series. I would also like to thank the IEEE for its continued support via the technical co-sponsorship of the series. I am deeply grateful to the international programme committee for its time and dedication, and I would particularly like to thank Fotis Liarokapis for his irrepressible energy and desire to keep pushing the VS-Games series to greater heights.

I hope you enjoy the conference!

A handwritten signature in black ink, appearing to read 'Alun Evans', with a stylized flourish at the end.

Dr. Alun Evans
Conference Chair

Keynote Speakers



Brian Goldiez, Ph.D., is the Deputy Director and Research Associate Professor at the University of Central Florida's (UCF) Institute for Simulation and Training. UCF is the largest university in the United States with over 60,000 students. He has been involved in various aspects of computer based training for over 40 years having worked for government, industry, and academia (25+ years). Goldiez publishes and consults regularly. His focus has been on using technology to optimize human performance. Recent efforts have been oriented towards dynamic load balancing in massively multi-player online games, fine motor motion tracking, distributed simulations, and augmented reality. This research has been applied in several domains such as military and healthcare. Dr. Goldiez has undergraduate and graduate degrees in engineering and was the first recipient of a doctorate in modelling and simulation from UCF.



Jordi Martín is Studio Manager at the Ubisoft Barcelona Mobile studio which has been a pioneer developing mobile games since 2002, first as Microjocs and then as DigitalChocolate. He is very proud to leading a team of +50 high talented people, and happy to provide the best support needed for the creation of the best mobile experiences, implying everything from Operations (IT, HR, Legal, Admin, etc..) to Business, Analytics, Production and Development. An avid gamer, Jordi combines a strong background in social and mobile game development with in-depth knowledge of the studio server team and infrastructure while developing its successful hits, including top#1 AppStore Tower Bloxx Live!.



Anthony Brooks is acknowledged as a third culture thinker and “world pioneer in digital media and its use with the disabled community”. Games-based intervention strategies, emergent in-action/on-action models, industry companies, commercial product, and patented communication method and apparatus have evolved from his research. Targeted is societal impact and benefit in respect of future demographics and service industries through applied ICT and optimized motivation of use through inclusive intervention strategies. As IFIP - (UNESCO) (International Federation for Information Processing) and European Alliance for Innovation representative he has also been appointed by the European Commission as EU expert examiner, rapporteur, and panel reviewer of funded projects (Serious Games/Gamification, Human-Computer Confluence, Presence and Future Emerging Technologies) His research has been responsible for national (DK) and international (EU) funded projects. National and International awards have been awarded for his contribution. He originates from Wales and achieved his PhD under the University of Sunderland, Great Britain.

Conference Location

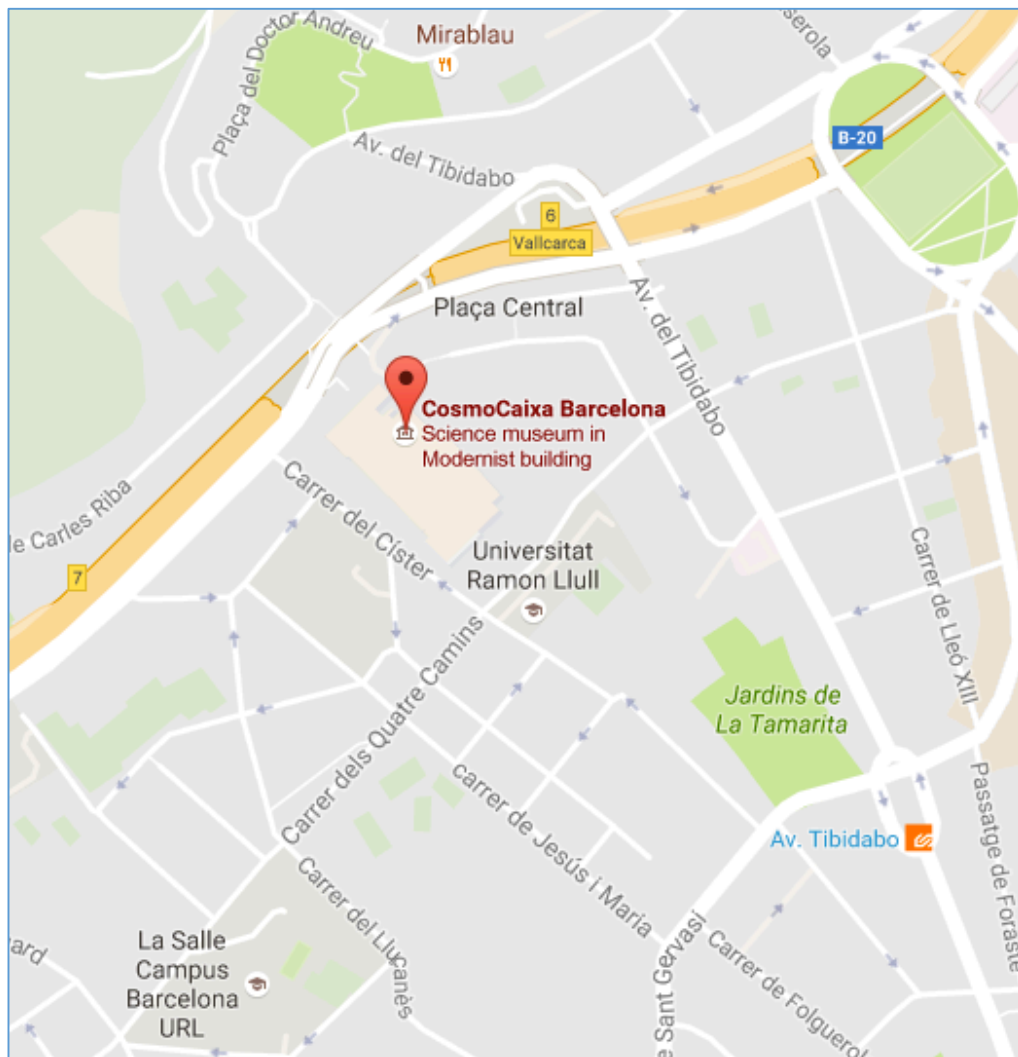
CosmoCaixa Barcelona; Carrer d' Isaac Newton, 26, 08022 Barcelona.
<https://goo.gl/maps/e6nwAwGgxJQ2>

Conference registration and badge collection is available at the counter on **Floor -1** (next to the Cafeteria)

You will need to collect an entrance ticket to the museum **separately on both Thursday and Friday morning** (i.e. Thursday's ticket will not work on Friday). The ticket permits free access to the museum during the two days of the conference. Once you leave the museum through the electronic gates, you will need to wait 5 minutes before being able to re-enter.

The main venue for the conference is the Àgora auditorium in CosmoCaixa, Barcelona's science museum. Where parallel sessions are scheduled, they will take place in the Gamma room.

Lunch, coffee and poster sessions will take place in the obvious open space on the same level as the Gamma room.



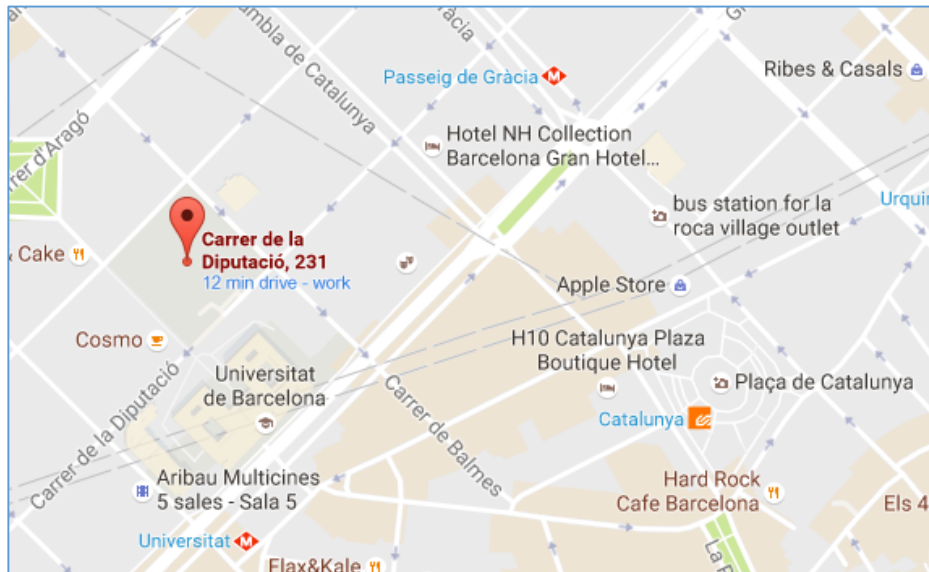
Satellite locations

Welcome Cocktail + Indie Games Fair

ENTI-University of Barcelona; C/ Diputació, 231, 08007 Barcelona

<https://goo.gl/maps/6ZDHZDvvF2B2>

Come and join us for an informal social gathering on the eve of the conference, meet fellow delegates and try out some of the best games created by the students of ENTI's various programmes.



Gala Dinner

Restaurant SAGARDI 1881;, Plaça Pau Vila, 3 08039 BARCELONA

<https://goo.gl/maps/e6nwAwGgxJQ2>



Wifi

Wireless internet is available at the CosmoCaixa during the conference. The network name is

wifi_cosmocaixa_barcelona

and has free access.

Programme

7th September

18.00-20.00	<p>Welcome cocktail and Indie Games Fair + Registration and Badge Collection</p> <p>ENTI-University of Barcelona C/ Diputació, 231, 08007 Barcelona (see map above)</p>
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8th September

Venue: CosmoCaixa Barcelona

8.15	<p>Registration Open Badge Collection Point: Floor -1, near Cafeteria</p>	
9.00	<p>Welcome Address Dr. Alun Evans (ENTI-UB)</p>	
9.10	<p>Keynote Talk Chair: Alun Evans Serious Games – Creating an Ecosystem for Success Dr. Brian Goldiez (University of Central Florida)</p>	
10.00	<p>F01: Games & Education (Ágora Room) Chair: Olga de Troyer</p> <p>Computers or tablets?: Choosing devices for educational videogames (Full paper) Alejandro Romero-Hernandez, Cesar Dias-Faes, Manuel Gonzalez-Riojo, Antonio Calvo-Morata and Borja Manero (University Complutense of Madrid; Harvard University)</p> <p>Game based learning: a case study on designing an educational game for children in developing countries (Full paper) Susan M. Ferreira, Charles Gouin-Vallerand and Richard Hotte (LICEF Research Center, Télé-Université du Québec)</p>	
11.00	<p>Coffee</p>	
11.30	<p>P01: Mixed and Virtual Reality (Ágora) Chair: Sebastian von Mammen</p> <p>Design for Collaboration in Mixed Reality: Technical Challenges and Solutions (Full paper) Erwin Peters, Bram Heiligers, Josse De Kievith, Xavier Razafindrakoto, Ruben van Oosterhout, Carlos Santos, Igor Mayer and Max Louwerse (NHTV Breda University of Applied Sciences; Tilburg University)</p> <p>Virtual Reality-based holistic framework: a tool for participatory development of customised playful therapy sessions for motor rehabilitation (Full paper) Ioannis Paraskevopoulos, Emmanuel Tseklevs, Alyson Warland and Cherry Kilbride (University of Greenwich; Imagination Lancaster; Brunel University London)</p> <p>A Kinesthetic Approach to Digital Heritage using Leap Motion: The Cycladic Sculpture Application (Full paper) Spyros Vosinakis, Panayiotis Koutsabasis, Dimitris Makris and Ekati-Ekaterini Sagia (University of the Aegean)</p>	<p>P02: Games & Learning (Gamma Room) Chair: Susan Ferreira</p> <p>Effects of Gamified Quiz to Student's Motivation and Score Yuki Tanaka, Hidetake Uwano, Tomohiro Ichinose and Shinya Takehara (National Institute of Technology, Nara College; Nara Institute of Science and Technology)</p> <p>Analysis of Game and Learning Mechanics according to the Learning Theories Irma Azeneth Patino Zuniga, Margarida Romero and Jean-Nicolas Proulx (Université Laval)</p> <p>What We Need to Know to Design Games for Formal Learning Environments Gloria Gomez and David Crombie (University of Southern Denmark; University of the Arts Utrecht)</p> <p>Students' attitudes in relation to exergame practices in Physical Education Marlom Zotti Bittencourt, Eliseo Reategui and João Batista Mossmann (Federal University of Rio Grande do Sul)</p>

13.00

Lunch & Posters

Virtual Reality Simulation Training for Student Nurse Education

James Elliman, Michael Loizou and Fernando Loizides

Woes of an RCT for Game-Based Learning Research: Past Problems & Potential Solutions

Andrea Gauthier and Jodie Jenkinson

Immersive Orchestras: audio processing for orchestral music VR content

Jordi Jane ,Emilia Gómez, Agustín Martorell and Benjamin de Wit

Stroke Event Simulator Using Virtual Reality

Pavlos Nicolaou, Michael Loizou and Fernando Loizides

Virtual Environment for the Training of the Hands in Minimally Invasive Thoracic Surgery

Jose A. Piedra-Fernandez, Juan J. Ojeda-Castelo, Florencio Quero-Valenzuela and Inmaculada Piedra-Fernandez

SingMaster: an intelligent mobile game for teaching singing

Georgi Dzhambazov

Algorithms and Approaches for Procedural Game Content Generation (A review of current techniques)

Thomas Rose and Anastasios Bakaoukas

Fall Prevention Serious Games for Elderly People using RGBD Devices

Ines Ayed, Adel Ghazel, Antoni Jaume-I-Capó, Moyà-Alcover Gabriel, Javier Varona and Paz Martínez-Bueso

Social inclusion through Games and VR. Games and virtual worlds to strengthen the personal 'real life' social network of people who are challenged in that area

Hein de Graaf

Evaluation-driven design for serious games, the multilayer methodology and collaborative framework

Abdelali Slimani, Elouaai Fatiha, Mohammed Bouhorma and Lotfi Elaachak

Program with Ixquic Educative Games and Learning in Augmented and Virtual Environments

Tania Patiño and Carmen Ramos

Sign Communication for People with Disabilities Using Kinect Technology at Home

Jose A. Piedra-Fernandez, Juan J. Ojeda-Castelo, Cesar Bernal Bravo and Luis Iribarne

14.00	<u>Keynote Talk (Ágora)</u> Chair: Oscar Garcia Data-Driven Game Development Jordi Martín (Ubisoft Barcelona Mobile)	
15.00	<u>F02: Game Design and Generation (Ágora)</u> Chair: Oscar Garcia Evidence-Based Mapping Between the Theory of Multiple Intelligences and Game Mechanics for the Purpose of Player-Centered Game Design (Full paper) Pejman Sajjadi, Olga De Troyer and Joachim Vlieghe (Vrije Universiteit Brussel) Ontology-based interactive animation/game generation for Chinese shadow play preservation (Full paper) Hui Liang, Jian Chang, Can Chen, Shujie Deng, Tong Ruofeng and Jian Zhang (Bournemouth University; Communication University of China; Changzhou University; Zhejiang University)	
16.00	Coffee	
16.30	<u>P03: Graphics and Animation (Ágora)</u> Chair: Brian Goldiez Procedural Modeling in Archaeology: Approximating Ionic Style Columns for Games (Full paper) Richard Konečný, Stella Sylaiou and Fotis Liarokapis (Utrecht University, Aristotle University of Thessaloniki, Masaryk University) Developing and Exploiting 3D Textured Models for a Serious Game Application Georgia Kontogianni, Christos Koutsaftis, Margarita Skamantzari, Andreas Georgopoulos and Christina Chrysanthopoulou (National Technical University of Athens; Athens School of Fine Arts) Web-based live speech-driven lip-sync: an audio-driven rule-based approach Gerard Llorach, Alun Evans, Josep Blat, Giso Grimm and Volker Hohmann (Universitat Pompeu Fabra; Carl von Ossietzky Universität Oldenburg)	<u>P04: Virtual World Experiences (Gamma)</u> Chair: David Crombie Virtual Museum: Playful Visitor Experience in the Real and Virtual World Maja Pivec and Anika Kronberger (FH JOANNEUM University of Applied Sciences) Virtual World Of Video Games Ekaterina Galanina and Eugene Akchelov (National Research Tomsk Polytechnic University) The Subjective Well-Being via Virtual Worlds Experience Thomas Photiadis and Panayiotis Zaphiris (Cyprus University of Technology)
18.00	Close of Sessions	
20.00	Gala Dinner Restaurant SAGARDI 1881 Museu d'història de Catalunya, Plaça Pau Vila, 3 08039 BARCELONA https://goo.gl/maps/e6nwAwGgxJQ2	

9th September

Venue: CosmoCaixa Barcelona

08.30	Registration Open Badge Collection Point: Floor -1, near Cafeteria
09.00	<u>F03: Novel Game Prototypes I (Ágora)</u> Chair: Alun Evans Game Prototype for Understanding Safety Issues of Life Boat Launching Process (Full paper) Min Jiang, Jian Chang, Mark Dodwell, Jeremy Jenkins, Huijun Yang and Jianjun Zhang (Bournemouth University; Royal National Lifeboat Institution; Northwest A&F University) Rules on Wheels: A Serious Game for Teaching Traffic Signs (Full paper) Sherif Ismail, Slim Abdennadher and Wael Abouelsaadat (German University in Cairo) YoWay: Coupling Narrative Structure with Physical Exploration in Multi-linear Locative Narratives (Full paper) Joaquim Colas, Valeria Righi, Alan Tapscott, Ayman Moghnieh and Josep Blat Universitat Pompeu Fabra
10.30	Coffee
11.00	<u>Keynote Talk (Ágora)</u> Chair: Fotis Liarokapis ZOOM: A serious games intervention design model Tony Brooks (Aalborg University)
12.00	<u>F04: Games & Physiology (Ágora)</u> Chair: Ioannis Paliokas Modulation of Physiological Responses and Activity Levels During Exergame Experiences (Full paper) John Edison Munoz Cardona, Sergi Bermudez I Badia, Monica Cameirao, Elvo Rubio Quintal and Teresa Paulino (Madeira Interactive Technologies Institute; Universidade da Madeira) Variations of Facial Actions While Playing Games with Inducing Boredom and Stress (Full paper) Fernando Bevilacqua, Per Backlund and Henrik Engström (University of Skövde) A Game Design Method For Therapeutic Games (Full paper) Stéphanie Mader, Guillaume Levieux and Stephane Natkin (CEDRIC - CNAM)
13.00	Lunch & Posters

14.00	<p><u>P05: Novel Game Prototypes II (Ágora)</u> Chair: Fotis Liarokapis</p> <p>SkyNetz: A Playful Experiential Robotics Simulator Robin Han, Dominik Auer, Sarah Edenhofer and Sebastian von Mammen (University of Augsburg)</p> <p>Waypass : A gamified self-knowledge quest for teenagers Oscar Garcia Pañella, Jordi Serra Madriles, Judith Membrives Llorens and Juan José Juárez (Cookie Box S.L.; Fundación Bertelsman)</p> <p>Becoming the Maestro - A Game to Enhance Curiosity for Classical Music Alvaro Sarasua, Mark Melenhorst, Carles F Julià and Emilia Gomez (Universitat Pompeu Fabra; TU Delft)</p> <p>Stigma-stop a serious game against the stigma in mental disorders Jose Piedra-Fernandez, Adolfo J. Cangas, Juan J. Ojeda-Castelo, Diego Cangas and Antonio J. Fernandez-Garcia (University of Almeria; Alborada Engineers)</p>	<p><u>P06: Commercial and Professional Applications (Gamma)</u> Chair: Alun Evans</p> <p>Self-Organisation in Games, Games on Self-Organisation (Full paper) Sebastian von Mammen (University of Augsburg)</p> <p>Open Device Lab: an analysis of available devices in the gaming market Raquel Godinho (IF Sul-rio-grandense)</p> <p>Eppur si Muove: Considerations in the Research of Commercial Video Games Carlos Mauricio Castano Diaz, Birgit Dörner, Heinrich Hussmann and Jan-Willem Strijbos (Ludwig-Maximilians-Universität München; Katholische Stiftungshochschule München; University of Groningen)</p> <p>A Concept for a Gamified Platform in Manufacturing Christoph E. Höllig, Eric Zimmerling, Matthias Kammer, Thomas Wolff, Philipp G. Sandner and Isabell M. Welp (Technische Universität München)</p>
15.30	Coffee	
16.00	<p><u>P07: New Game Experiences (Ágora)</u> Chair: Tony Brooks</p> <p>Pheromander: Real-time Strategy with Digital Pheromones Simon Kerler, Johannes Vilsmeier, Sebastian von Mammen and Sarah Edenhofer (University of Augsburg)</p> <p>Come Fly With Me – Perceive the World Through a Mosquito's Senses Christopher Stifter, Sarah Edenhofer and Sebastian von Mammen (University of Augsburg)</p> <p>Towards the BioFeedback Game with Interoception and Rehabilitation Yoichi Nagashima (Shizuoka University of Art and Culture)</p>	<p><u>P08: Studies and Surveys (Gamma)</u> Chair: Spyros Vosinakis</p> <p>The Use of Serious Games in Museum Visits and Exhibitions: A Systematic Mapping Study (Full paper) Ioannis Paliokas and Stella Sylaiou (DUTH/ELED; AUTH)</p> <p>Using UML to Model Educational Games Rafael P De Lope and Nuria Medina-Medina (Universidad de Granada)</p> <p>Brain-Computer Interfaces - A Survey on Interactive Virtual Environments Bojan Kerouš and Fotis Liarokapis (Masaryk University)</p>
17.00	Awards Session, Conference Close	