



XXVIII Spanish Computer Graphics Conference

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Table of Contents

Table of Contents	iii
Preface	v
Organizing Committee / International Program Committee	vi
Author Index	vii
Keynotes	viii
Animation and Simulation	
Muscle Simulation with Extended Position Based Dynamics	1
<i>Marco Romeo, Carlos Monteagudo, and Daniel Sánchez-Quirós</i>	
Modelling the Fluid-Boundary Interaction in SPH	11
<i>Juan J. Perea and Juan M. Cordero</i>	
Toward Estimation of Yarn-Level Cloth Simulation Models	21
<i>Alberto Martín-Garrido, Eder Miguel, and Miguel Ángel Otaduy</i>	
A Prototype of a Scalable Multi-GPU Molecular Dynamics Simulator for Large Molecular Systems	25
<i>Gonzalo Nicolas-Barreales, Marcos Novalbos, Miguel Ángel Otaduy, and Alberto Sánchez</i>	
Graphics Interaction, Visualization and Rendering	
A Physically-Based Spatio-Temporal Sky Model	29
<i>David Guimera, Diego Gutierrez, and Adrián Jarabo</i>	
A Usability Study for a Novel Approach to Virtual Reality Interaction	39
<i>José Negrillo, Juan Roberto Jiménez, and Francisco Ramón Feito</i>	
A Prototype of Virtual Reality System for the Visualization, Exploration and Modeling of Huge Point Clouds	43
<i>José Ortega-Donaire, Rafael Jesús Segura-Sánchez, Carlos-Javier Ogáyar-Anguita, and Antonio Jesús Rueda-Ruiz</i>	
Rendering and Interacting With Volume Models in Immersive Environments	47
<i>Joan Fons, Eva Monclús, Pere-Pau Vázquez, and Isabel Navazo</i>	
Design and Implementation of a Volumetric Merging Tool	51
<i>Isabel Vidaurre-Gallart, Aaron Sújar, and Marcos García</i>	
Virtual and Augmented Reality	
FORHSS-TEA, Support to the Individual Work System for People With Autism Spectrum Disorder Using Virtual and Augmented Reality	55
<i>Javier Sevilla, Lucia Vera, Gerardo Herrera, and Marcos Fernández</i>	

Table of Contents

Study of the Influence of User Characteristics on the Virtual Reality Presence	65
<i>Jesús Mayor, Alberto Sánchez, and Laura Raya</i>	
On the Design of a Mixed-Reality Annotations Tool for the Inspection of Pre-fab Buildings	75
<i>Inma García-Pereira, Jesús Gimeno, Cristina Portalés, María Vidal-González, and Pedro Morillo</i>	
Experiences From the Development of a Prototype of an Spatial Augmented Reality System	79
<i>José Luis Cárdenas-Donoso, Ángel-Luis García-Fernández, Francisco-de-Asís Conde-Rodríguez, and Carlos-Javier Ogáyar-Anguita</i>	
PterosaVR MUVHN: una aplicación para la reconstrucción virtual de <i>Tropeognathus mesembrinus</i>	83
<i>Tonny Ruiz-Gijón, Marcos Gutiérrez Cubells, Borja Holgado, Hugo Salais López, María Vidal-González, and Anna García Forner</i>	
Procedural Modelling and Models Acquisition	
Noise Reduction Automation of LiDAR Point Clouds for Modeling and Representation of High Voltage Lines in a 3D Virtual Globe	87
<i>Jaisiel Santana, Sebastián Ortega, José Miguel Santana, Agustin Trujillo, and Jose Pablo Suárez</i>	
Blast Features and Requirements for Fracturing Osseous Models	91
<i>Francisco Daniel Pérez, Juan José Jiménez, and Juan Roberto Jiménez</i>	
Depth Map Repairing for Building Reconstruction	95
<i>Carlos Andújar, Oscar Argudo, Isaac Besora, Pere Brunet, Antoni Chica, and Marc Comino</i>	
LeoMCAD: A Lego-based Mechanical CAD system	103
<i>Francisco González García, Jesús Amador Pérez Martín, and Gustavo A. Patow</i>	
Data Analysis and Visualization	
A Procedural Approach for Thermal Visualization on Buildings	109
<i>David Muñoz, Gonzalo Besuievsky, and Gustavo A. Patow</i>	
A Visual Interface for Feature Subset Selection Using Machine Learning Methods	119
<i>Diego Rojo, Laura Raya, Manuel Rubio-Sánchez, and Alberto Sánchez</i>	
3D Mapping Approach to Analyze the Evolution of Vegetation Using Multispectral Imagery	129
<i>Juan Manuel Jurado, Lidia Ortega, and Francisco Ramón Feito</i>	

Preface

This text is a brief introduction to the Proceedings of the *XXVIII Congreso Español de Informática Gráfica* (the *28th Spanish Conference in Computer Graphics*), held in Universidad Rey Juan Carlos (Madrid), from June 27 to 29, 2018. As Programme Co-chairs, we are glad to help and enjoy collaborating in the dissemination of the research results of Computer Graphics research groups in Spanish universities and companies. It is an honour for us to be able to continue the (now long) tradition of this conference, which has allowed researchers, professionals and students to gather and exchange information about our activity in this field.

We would like to thank the team at Rey Juan Carlos University, under the direction of Dan Casas, for their excellent job in the organization of this event, and also to José San Martín as posters session chair and to Luis Matey as conference chair. Programme Committee members have devoted their time to help authors to improve these texts you can now read. We want to give them thanks for this invaluable help, we are sure authors will appreciate this excellent aid to their research tasks.

For this edition of the conference, we have accepted 9 regular papers and 14 short papers to be presented during the event. You can access the corresponding texts in these proceedings. Several high-quality, already published invited papers will also be presented. Finally, a posters session will allow attendees and authors further discussion. We believe these contributions yield an excellent image of the current research lines of Spanish CG groups. They cover a variety of topics in Computer Graphics and Visual Computing, such as scientific visualization, visual data analysis, volumetric models visualization and manipulation, geometrical and aspect models acquisition and analysis, simulation of biological and artificial materials, augmented and virtual reality, physically based rendering and optical simulation.

This year the programme will include five keynote speakers, with an excellent experience in Computer Graphics as shown by their academic publications in books, journals and conferences, and who will present recent interesting developments in visualization, simulation and rendering techniques for science, video-games and film production. **Barbora Kolízková** is an Associate Professor at *Masaryk University* (Brno) and has a wide background in methodologies for visualization and visual analysis of biomolecules and their complexes. **Marco Romeo** worked in *MPC* (London), and now he is responsible for research at *El Ranchito* (Madrid). He has leaded and collaborated in the development of technologies and tools for simulation and animations for many world acclaimed productions, such as *Games of Thrones*, *Lost in Space*, *The Jungle Book*, or *Ghost in the Shell*. **Jorge Jiménez** is a real-time graphics researcher at *Activision Publishing*, and has designed algorithms for efficient high-quality rendering in video-games, used in well known products such as *Call Of Duty*. **Alan King** was a designer and developer at *Solid Angle*, and is now principal software engineer at *Autodesk*. He has been working for nearly 20 years in the development of *Arnold*, one of the leading rendering software products oriented to films production, and was awarded with a Scientific and Engineering Award during the 89th annual Oscars. **Jorge López** is director of *Desilico Labs* (Madrid) an innovative company for mechanical and optical simulation software for the fashion industry. He has been intern researcher at *Adobe Systems*, where he contributed to four patents related to image editing techniques for products such as *Photoshop* and *Flash*.

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Author Index

Andújar, Carlos	95	Morillo, Pedro	75
Argudo, Oscar	95	Muñoz, David	109
Besora, Isaac	95	Navazo, Isabel	47
Besuievsky, Gonzalo	109	Negrillo, José	39
Brunet, Pere	95	Nicolas-Barreales, Gonzalo	25
Cárdenas-Donoso, José Luis	79	Novalbos, Marcos	25
Chica, Antoni	95	Ogáyar-Anguita, Carlos-Javier	43, 79
Comino, Marc	95	Ortega, Lidia	129
Conde-Rodríguez, Francisco-de-Asís	79	Ortega, Sebastián	87
Cordero, Juan M.	11	Ortega-Donaire, José	43
Cubells, Marcos Gutiérrez	83	Otaduy, Miguel Ángel	21, 25
Feito, Francisco Ramón	39, 129	Patow, Gustavo A.	103, 109
Fernández, Marcos	55	Perea, Juan J.	11
Fons, Joan	47	Pérez, Francisco Daniel	91
Forner, Anna García	83	Portalés, Cristina	75
García, Francisco González	103	Raya, Laura	65, 119
García, Marcos	51	Rojo, Diego	119
García-Fernández, Ángel-Luis	79	Romeo, Marco	1
García-Pereira, Inma	75	Rubio-Sánchez, Manuel	119
Gimeno, Jesús	75	Rueda-Ruiz, Antonio Jesús	43
Guimera, David	29	Ruiz-Gijón, Tonny	83
Gutierrez, Diego	29	Sánchez, Alberto	25, 65, 119
Herrera, Gerardo	55	Sánchez-Quirós, Daniel	1
Holgado, Borja	83	Santana, Jaisiel	87
Jarabo, Adrián	29	Santana, José Miguel	87
Jiménez, Juan José	91	Segura-Sánchez, Rafael Jesús	43
Jiménez, Juan Roberto	39, 91	Sevilla, Javier	55
Jurado, Juan Manuel	129	Suárez, Jose Pablo	87
López, Hugo Salais	83	Sújar, Aaron	51
Martín, Jesús Amador Pérez	103	Trujillo, Agustin	87
Martín-Garrido, Alberto	21	Vázquez, Pere-Pau	47
Mayor, Jesús	65	Vera, Lucia	55
Miguel, Eder	21	Vidal-González, María	75, 83
Monclús, Eva	47	Vidaurre-Gallart, Isabel	51
Monteagudo, Carlos	1		

Keynote

Barbora Kozlíková



Short Biography

Barbora is an Associate Professor at the Department of Computer Graphics and Design at the Faculty of Informatics at MU. She got her PhD degree in the field of Visualization of Protein Molecules and their Tunnels in 2011. Her research interests include namely visualization and visual analysis of biomolecules and their complexes and analysis of protein structure using computational geometry and path planning. Barbora has supervised more than 60 Master and Bachelor theses and co-supervised two successfully defended PhD theses. Barbora currently acts as the general chair of the EuroVis conference in Brno, Czech Republic, in 2018.

Keynote

Marco Romeo



Short Biography

Marco Romeo es el jefe del departamento de Investigación y Desarrollo de El Ranchito, empresa española puntera en la industria de los efectos visuales. En el Ranchito ha participado en varias producciones internacionales como Game of Thrones y Lost in Space. Antes de sumarse al equipo de El Ranchito trabajó en MPC London, liderando el equipo de investigación y desarrollo de personajes para películas como The Jungle Book y Ghost in the Shell. Con un PhD en Tecnología de la Información y los Medios Audiovisuales, su interés para la investigación ha sido reconocido por medio de publicaciones en SIGGRAPH y otras conferencias internacionales.

Keynote

Jorge Jiménez



Short Biography

Jorge Jiménez is a real-time graphics researcher at Activision Publishing, Inc. He received his PhD degree in real-time graphics from Universidad de Zaragoza (Spain) in 2012. His interests include real-time photorealistic rendering, special effects, and squeezing rendering algorithms to be practical in game environments. He has contributions in books, journals, and conferences, including the GPU Pro series, Game Developer Magazine, and the Transaction on Graphics journal. Some of his key achievements include SMAA, GTA0, the separable subsurface scattering technique, and contributing on the technology of all Call of Duty titles shipped in the current generation.

Keynote

Alan King



Short Biography

Alan King is a principal software engineer at Autodesk who for nearly 20 years has participated on “Arnold”; a 3D rendering software that is widely used in animation and visual effects for television and film. Alan’s primary role is the research and development of state-of-the-art rendering technologies, several of which have seen publication at computer graphics conferences such as EGSR and SIGGRAPH. Recently, Alan along with four of his colleagues were awarded with a Scientific and Engineering Award during the 89th annual Oscars, in recognition of the impact “Arnold” has had on the motion pictures industry and the importance of their personal involvement in the project.

Keynote

Jorge López Moreno



Short Biography

Jorge López Moreno es socio fundador y Director de Desilico Labs, creadores de tecnología de simulación mecánica y óptica de moda. Obtuvo su doctorado en Ingeniería informática bajo la supervisión de Diego Gutierrez y Erik Reinhard (U. Bristol, UK), recibiendo el Premio Extraordinario de Tesis de la Universidad de Zaragoza. Durante sus estudios, financiados por Adobe Systems, realizó más de 8 meses de estancias en la sede de Adobe Advanced Technology Labs (San Jose, California) y obtuvo tres patentes en técnicas de procesamiento de imagen y edición 3D. Tras dos años de estancia postdoctoral en INRIA (Francia), recibe en dos ocasiones la beca nacional Juan de La Cierva como investigador en la Universidad Rey Juan Carlos.