

VRIPHYS 15

12th Workshop on Virtual Reality Interactions and Physical Simulations

Lyon (France)
November 4 – 5, 2015

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Preface

The workshop on Virtual Reality Interactions and Physical Simulations (VRIPHYS) is one of the well-established international conferences in the field of computer animation and virtual reality. The goal of this workshop is to attract high-quality research papers in the domains of dynamic simulation and physical interaction in virtual reality environments. We also welcome papers showing on-going research with promising results and new technology with applications of related focus.

Since 2004, this annual workshop has provided an opportunity for researchers in computer animation and virtual reality to present and discuss their latest results, and to share ideas for potential directions of future research. The first workshop was held in Colima (Mexico), followed by successful workshops in Pisa (Italy), Madrid (Spain), Dublin (Ireland), Grenoble (France), Karlsruhe (Germany), Copenhagen (Denmark), Lyon (France), Darmstadt (Germany), Lille (France) and Bremen (Germany).

This year, the 12th VRIPHYS workshop is back to Lyon, and is hosted by the University of Lyon 1 and the LIRIS research laboratory. VRIPHYS is organized in collaboration with Eurographics (EG). The workshop takes place on November 4-5, 2015, with a technical program of 15 accepted full papers, posters, or short presentations of work in progress. Members of the International Program Committee (IPC) have reviewed the submitted full papers. Each paper has been evaluated by, at least, 3 reviewers that are experts in the field. The submission review management system (SRMv2) was provided by EG. The workshop proceedings are published in the EG Digital Library.

Two high-level keynote presentations will enlight the workshop. Arjan EGGES is an Associate Professor at the Virtual Human Technology Lab in the Department of Information and Computing Sciences, Utrecht University in the Netherlands. Jean-Rémy CHARDONNET is an associate professor at Arts et Métiers ParisTech and member of the Institut Image, Chalon-sur-Saône, France. We would like to thank them very much for accepting our invitation. The program is completed by a bunch of demonstrations of industrial solutions or open-source software.

The VRIPHYS workshop will be directly preceded a Sofa-Users day, that will propose some tutorials for SOFA and to present recent work based on this open-source platform. This will be the opportunity to increase exchange and communication within the SOFA community. We hope that the co-location of this event with VRIPHYS will create potential synergies for attendees.

The organizing committee would like to acknowledge the continuous and great help of S. Behnke for handling numerous questions regarding the submission and publication procedures. We also thank NVIDIA for sponsoring the Best Paper Award with a high-end Quadro M6000 graphics card, and especially C. Crassin and G. Polajillon who made this possible. Finally, we would like to thank all members of the IPC and reviewers board for the very constructive and timely reviews, and special thanks to J. Bender for its valuable help and advice.

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Keynote Presentation

Virtual Character Animation for Games

Arjan Egges

Abstract

In this talk, I will give an overview of our past and ongoing work on animating virtual characters for games. The first part of the talk will be about parameterization schemes for controlling virtual characters that allow one to control what characters are doing on a high level. Examples of such schemes are characters walking along a path, or characters following a predefined set of footsteps. Then, I will discuss (simplified) representations of characters used in many animation systems to check for collisions, or to plan navigation, and the implications of such simplifications. I will conclude the talk with some of our ongoing work on animating navigating characters in a crowd and how characters are represented in such systems.

Brief Biography

Arjan EGGES is an Associate Professor at the Virtual Human Technology Lab in the Department of Information and Computing Sciences, Utrecht University in the Netherlands. He obtained his PhD at MIRALab - University of Geneva, Switzerland on the topic of emotion and personality models, in combination with automatically generated face and body motions using motion capture data. His current research focuses on crowd animation and motion perception as a part of the COMMANDS, COMMIT and TARDIS projects. He is also a member of the Games and Learning Alliance (GaLA). He teaches several courses related to games and computer animation. Arjan is also an associate editor of the Computer Animation and Virtual Worlds journal published by Wiley and he is one of the founders of the annual Motion in Games conference.

Keynote Presentation

Multi-sensory Simulation in Immersive Virtual Reality

Jean-Rémy Chardonnet

Abstract

The rapid development of immersive virtual reality systems over the past years and its deployment especially in industry raised great scientific issues related to data visualization, simulation. Especially, the human-centered aspects of virtual reality (immersion, presence, . . .) in virtual environments imposes interacting efficiently with virtual data, and thus constraints such as real time simulations and multi-sensory feedbacks, like tactile/haptic feedbacks, for enhanced immersive simulation. In this presentation, we will show how simulation can be enhanced in immersive virtual reality by integrating tactile/haptic feedback, through some examples of work conducted at Institut Image/ENSAM.

Brief Biography

Jean-Rémy CHARDONNET is an associate professor at Arts et Métiers ParisTech and member of the Institut Image, Chalon-sur-Saône. He received his PhD in humanoid robotics from Montpellier II university, on the topics of interactive physical simulation of humanoid robots, considering friction and deformation. He also worked at INRIA Grenoble in the Evasion team (currently Imagine) on the development of a hands-on haptic peripheral device for virtual object manipulation that was patented. His current research topics include natural and intuitive interaction (navigation, manipulation) in virtual environments. He is an IEEE and AFRV member. He is the coordinator of the MSc program “Digital mock-up and 3D visualization” of Arts et Métiers ParisTech.