## GRAPP 2013

8th International Conference on Computer Graphics Theory and Applications

## IVAPP 2013

4th International Conference on Information Visualization Theory and Applications

## Proceedings

Barcelona, Spain 21 - 24 February, 2013



# GRAPP 2013 IVAPP 2013

Proceedings of the
International Conference on
Computer Graphics Theory and Applications
and
International Conference on
Information Visualization Theory and Applications

Barcelona, Spain

21 - 24 February, 2013

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## SELECTED PAPERS BOOK

A number of selected papers presented at VISIGRAPP 2013 will be published by Springer-Verlag in a CCIS Series book. This selection will be done by the Conference Chair and Program Co-chairs, among the papers actually presented at the conference, based on a rigorous review by the VISIGRAPP 2013 Program Committee members.

### **FOREWORD**

This book contains the proceedings of the International Conference on Computer Graphics Theory and Applications (GRAPP 2013) and of the International Conference on Information Visualization Theory and Applications (IVAPP 2013) which were organized and sponsored by the Institute for Systems and Technologies of Information, Control and Communication (INSTICC).

We hope that the proceedings here published, demonstrate new and innovative solutions, and highlight technical problems in each field that are challenging and worthwhile.

Thus, GRAPP and IVAPP were organized to promote a discussion forum between researchers, developers, manufactures and end-users, about the conferences research topics and to establish guidelines in the developing of more advanced solutions.

We received a high number of paper submissions for this edition of GRAPP, 83 in total, with contributions from all five continents which attest to the success and global dimension of GRAPP. To evaluate each submission, we used a double-blind evaluation method and each paper was reviewed by at least three experts. At least two experts were from the International Program Committee. Among them the Primary expert was in charge of leading a discussion together with all the reviewers of the paper in order to propose an initial recommendation to the Area chairs and Program Chairs. The Area Chairs and Program Chairs made the final selection. In the end, 21 papers were selected for publication as full papers; 17 papers were accepted for short presentation and 12 were accepted for poster presentation. The result was an oral-paper acceptance ratio of 46% and a high-quality program that is attractive to experts from Computer Graphics area.

A high number of paper submissions for this edition of IVAPP was also received, 42 in total, with contributions from all five continents which attest to the success and global dimension of IVAPP. 9 papers were selected for publication as full papers; 6 papers were accepted for short presentation and 7 were accepted for poster presentation. The result was an oral-paper acceptance ratio of 36% and a high-quality program that is attractive to experts from Information Visualization area.

We hope that these Conference Proceedings, submitted for indexation by Thomson Reuters Conference Proceedings Citation Index, INSPEC, DBLP and EI, may help the Computer Graphics community to find interesting research work. Furthermore, a short list of presented papers will be selected to be expanded into a forthcoming book of VISIGRAPP Selected Papers to be published by Springer during 2013.

Moreover, we are proud to inform that the program also includes four plenary keynote lectures, given by internationally distinguished researchers, namely – Jeffrey Ventrella (Visual Music Systems, United States), Roberto Scopigno (Visual Computing Lab, CNR-ISTI, Italy), Frank van Ham (IBM Software Group, United Kingdom) and Alfred Inselberg (Tel

Aviv University, Israel), thus contributing to increase the overall quality of the conference and to provide a deeper understanding of the conference interest fields.

In order to promote the development of professional networks the organizing committee has prepared a Conference Dinner in the evening of February 23rd. We hope that you enjoy this exciting conference and have an unforgettable stay in the beautiful city of Barcelona, Spain.

Finally, we would like to express our thanks, first of all, to the authors of the technical papers, whose work and dedication make possible to put together a program that we believe very exciting and of high technical quality. Next, we would like to thank all the members of the program committee and auxiliary reviewers, who helped us with their expertise and time. The area chairs of GRAPP, namely - Pere Brunet (Technical University of Catalonia, Spain), Veronica Orvalho (Faculdade de Ciências da Universidade do Porto, Portugal) and Julien Pettré (INRIA-Rennes, France), had a crucial and most essential role in the conference and therefore they also deserve a big thank you. We would also like to thank the invited speakers for their invaluable contribution and for sharing their vision in their talks. Special thanks should be addressed to the INSTICC Steering Committee whose invaluable work made possible this event.

We wish you all an exciting conference and an unforgettable stay in Barcelona, Spain. We hope to meet you again for the next edition of GRAPP and IVAPP, details of which will be shortly available at http://www.grapp.visigrapp.org and http://www.ivapp.visigrapp.org.

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