

Guest Editorial Preface

Special Issue on the ARTECH 2015 International Conference

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ABOUT THE ARTECH 2015 CONFERENCE

The Seventh International Conference on Digital Arts - ARTECH 2015, was hosted by Universidade Aberta in the ancient village of Óbidos, Portugal, on March 18-20, 2015.

The ARTECH conferences aim at bringing the scientific, technological, and artistic community together, while promoting the interest in the digital culture and its intersection with art and technology as an important research field, a common space for discussion and exchange of experiences. During three days, researchers, artists and multidisciplinary teams from around the world had the opportunity to share ideas and their work at ARTECH 2015.

Only two decades ago, interactive digital media seemed like a brand-new research field and an emerging new industry. Today, the digital arts field has come of age and is closely connected with new interfaces and emerging digital media. A critical aspect of the digital media revolution is the formation of the new media industry comprised of information, communication, entertainment, and global social networks. The ARTECH 2015 conference provided in-depth coverage of the important concepts, issues and technology trends in the field of digital arts and media technologies, techniques, and applications, while seeking to foster greater understanding about digital arts and culture.

This edition of the ARTECH conference series was dedicated to the “creation of digital e-motions”, considering this as one of the greatest technological challenges that digital artists face today. How to make people smile? How to trigger curiosity? What artifacts bring about strong emotions? But the theme also brings about the idea of “motion,” as in movement and mobility enabled by digital technology, something that now becomes a paramount concept for engineers, scientists, philosophers and artists. So, this conference was a meeting point for new ideas pointing to a future of new prospects and new interpretations in the arts. This edition of the conference included generative art, data visualization, digital preservation, sound and immersive art, urban spaces, tangible and gesture interfaces, the latter accommodating mobile technologies such as smartphones and tablets that have become widespread creation instruments. What techniques will dominate the future digital arts? What happens when anyone in the street has access to the tools of creation? How will digital art be preserved and shared in the future? These are questions that still puzzle us...

IN THIS ISSUE

This special issue started with a selection of the best papers submitted to ARTECH 2015 followed by an expansion and review of the original work. The articles were written by many internationally experienced researchers and specialists in several disciplines, including a set of younger authors, showing a promising potential for research and development. Contributions came from many countries, from Brazil to Australia, and integrate work from academia, research institutions, and industry, indicating a comprehensive representation of the state-of-the-art approaches and developments that address the broad field of digital arts.

The article by Ludmila Pimentel and Mirella Misi, about *Interfaces between Don Idhe, Merleau-Ponty and Gretchen Schiller's embodiment concepts applied to Mediadance*, sets an innovative context for dance based on the use the term *mediadance*, referring to art practices integrating digital technology into choreographic work. This article develops the idea that this kind of art is an actual category that promotes new sensual experiences for the human body. Based on Schiller's concept of "kinesfield" and revisiting Merleau-Ponty's concepts of "body schema" and "flesh of the world", the author's research addresses the forms of relation that are established in the bodily experience of mediadance.

In *ZatLab Gesture Recognition Framework: Machine Learning Results*, André Baltazar addresses: the real-time recognition of gestures, particularly in the complex domain of artistic performance. By recognizing the performer gestures, it is possible to map them to diverse controls, from lightning control to the creation of visuals, sound control or even music creation, thus allowing performers real-time manipulation of creative events. The work presented takes up this challenge, using a multidisciplinary approach to the problem, based in some of the known principles of how humans recognize gesture, together with the computer science methods to successfully complete the task. The overall goal of this research is to foster the use of gestures in the creation of new ways of expression.

Movement in Architecture: Disciplining The Digital Diagram, by Gavin Perin and Christopher Bowman, discusses how digital technology can capture and configure contextually situated three-dimensional data to an unprecedented resolution. This is particularly true in biomedicine, where contemporary motion capture systems have dramatically extended the early photographic studies of Étienne-Jules Marey and Eadweard Muybridge. Yet, the accuracy of these modern systems, which for these authors includes hardware and software, risks sublimating the mediating effects of the system on the data. Hence, the instrumentalization of data, supported by the inductive process, risks converting individual datasets into a universal measure of the body; effectively confusing physiological knowledge with embodied knowledge. Accordingly, the article discusses how operating beyond instrumentalization influences the nature of these issues and opportunities. In the process, the article will also raise a series of critical issues that work to delimit the architectural application of movement data.

The article entitled *Augmented Reality in Informal Learning Environments: A Music History Exhibition*, by José Gomes, Mauro Figueiredo, Lúcia Amante and Cristina Gomes, presents an interactive exhibition supported by Augmented Reality (AR) technology. The virtual exhibition focus on the Aesthetic Periods of Music History and it is aimed at an audience of students from the 2nd and 3rd Cycle of Basic Education in Portugal public schools. In this article, the authors discuss the concept, definitions and current use of AR technology in teaching-learning processes. Topics such as constructivism, the relation between art education, information technology (IT) and student motivation are also addressed by the authors.

The article *Transmedia Storytelling as an Educational Strategy: A prototype for learning English as a Second Language*, by Patricia Rodrigues and José Bidarra, reports on how transmedia is steadily gaining ground in education and looks into the interface and story design stage of a transmedia learning project targeted to English as Second Language learners. It further explores aspects concerning the integration of learning goals and strategies within the structure of the project. In this manner, authors

are contributing to the development of a transmedia learning environment that is engaging, and with potential to meet the needs of 21st Century learners.

Last but not least, in *Interactivity, Cinema and Experimentation: The Forking Paths*, authors Bruno Mendes da Silva, Vítor Reia-Baptista and Mirian Tavares report on a project that seeks to align applied research and experimental development. This article begins with a visit to the most significant moments in the history of interactive cinema, both at a purely technological level and at an aesthetic level, which is the result of a balanced combination between creative content and technology. Then, the central issue of the project is presented – time in cinema – relating it to the theme and form of the tales chosen for adaptation. The working methods and the interactive films produced or invited within the scope of the project were given special attention. Finally, the platform, the virtual space to where all content related to the project (from news to scientific articles) converged, was also analyzed in this article.

Guest Editors

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ACKNOWLEDGMENT

We wish to thank the Editors-in-Chief of the International Journal of Creative Interfaces and Computer Graphics (IJCICG), Ben Falchuk and Adérito Marcos, for giving us the opportunity to put together this special issue, and we also thank all the authors for their contributions.

We are pleased to acknowledge the colleagues that contributed additional reviews for this issue:

- Alicia González Pérez (UEX – Spain)
- Beata Joanna Godejord (NordU - Norway)
- Denize Araújo (UTP – Brazil)
- Ellen Rusman (OUNL – Netherlands)
- Francisco Revuelta: (UEX – Spain)
- Jesús Valverde (UEX – Spain)
- João Rodrigues (UA1g – Portugal)
- José Sanches Ramos (UL – Portugal)

José Bidarra has a PhD in Educational Communications by Universidade Aberta (the Portuguese Open University), where he is currently Professor in the Department of Science and Technology. He is head of the Informatics, Physics and Technology Section (SIFT) and has been coordinator of several master degree programs. He was co-author of the virtual pedagogical model used by Universidade Aberta. His current research interests focus mainly on the application of multimedia and digital media in distance education, including ebooks, games and simulations. Some of his master and doctorate students are developing new methodologies to engage learners in valuable experiences with digital media. Most of the research is conducted at Universidade Aberta and at CIAC (Research Centre on Arts and Communication, University of Algarve); other research includes a recent fellowship at the Games, Learning, and Society unit, University of Wisconsin – Madison (USA), and frequent collaborations with Portuguese and European universities.

Mauro Figueiredo has a PhD in computer science from the University of Salford, Manchester, in 2005. He was teacher at University of Coimbra from 1989 until 1996. Since 1996 he is at the Algarve University where he is adjunct professor. His research interests are in the use of information technologies for education, e-learning, b-learning, games and augmented reality. His PhD students are currently working with ebooks and augmented reality tools for e-learning. He is author of more than seventy international journal and conferences articles, book chapters and books and he collaborated and participated in different National projects. He is the international coordinator of the Erasmus+ project MILAGE: Interactive Mathematics by implementing a Blended-Learning model with Augmented Reality and Game books. He has several papers best awards and a school project in augmented reality nationally recognized. He already organized several international conferences. Most of the research is conducted at Univ. Algarve, at CIMA (Center of Marine and Environmental Research) and CIAC (Center for the Arts and Communication Research). CV: <http://w3.uaalg.pt/~mfiguei/cvmfuk.pdf> ORCID: <http://orcid.org/0000-0001-9394-4868>

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Mirian Nogueira Tavares is Associate Professor at the University of Algarve. With academic studies in Communication Sciences, Semiotics and Cultural Studies (Ph.D. in Communication and Contemporary Culture, from the Federal University of Bahia), she has developed research work and theoretical production in fields related to Cinema, Literature and other Arts, as well as artistic and aesthetic film studies. As a lecturer at the University of Algarve, she has participated in the development of the Visual Arts degree, the Master's programmes in Communication, Culture and Arts and Cultural Management and the PhD programmes in Communication, Culture and Arts and Digital Media and Arts. She is the current the Coordinator of CIAC (Arts and communication Research Centre), funded by FCT.