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Intelligent Technologies for Interactive Entertainment

Original

Intelligent Technologies for Interactive Entertainment / Shaghghi, Navid; Lamberti, Fabrizio; Beams, Brian; Shariatmadari, Reza; Amer, Ahmed. - STAMPA. - 377(2021).

Availability:

This version is available at: 11583/2901998 since: 2021-05-20T16:54:57Z

Publisher:

Springer

Published

DOI:

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Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering

377

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Intelligent Technologies for Interactive Entertainment

12th EAI International Conference, INTETAIN 2020
Virtual Event, December 12-14, 2020
Proceedings

Preface

We are delighted to introduce the proceedings of the 12th edition of the European Alliance for Innovation (EAI) International Conference on Intelligent Technologies for Interactive Entertainment (INTETAIN 2020). This conference brought together researchers, developers, and practitioners from around the world who are active in areas including art, science, design, and engineering for computer-based systems (algorithms, models, software, tools, etc.) and devices (digital cameras, Internet of Things components, Extended Reality equipment, etc.) that provide intelligent human interaction and/or entertainment experiences. This year's edition of the conference put emphasis on how technology is changing the way humanity interacts with reality, ranging from the usage of digital art in its many forms for entertainment to the usage of technology to provide a new lifeline to many segments of the human population who have been disenfranchised.

The technical program of INTETAIN 2020 consisted of 19 full papers in oral presentation sessions at the main conference tracks. The conference program included five sessions: Session 1 – Big Ideas and Ethics; Session 2 – Haptics, Audio, and Internet of Things (IoT); Session 3 – Industry and Government; Session 4 – Machine Learning (ML); and Session 5 – Extended Reality (XR) and Human Computer Interaction (HCI). Aside from the high-quality technical paper presentations, the technical program also featured three keynote speeches, one invited talk, four technical workshops, a demo, and a poster competition session with 10 finalists and 4 prizes in different categories.

The three keynote speeches were “Questions and Answers on Technology Ethics” by Brian Green, Director of Technology Ethics at Santa Clara University’s Markulla Center for Applied Ethics, USA; “Maintaining the Ethics of Artificial Intelligence in the era of Over Digitization: Risks for Machines from Machines” by Abhishek Biswas, Senior Management Consultant at Protiviti Middle East, UAE; and “Leveraging Classical Mathematics for Computer Art and Design” by Frank Farris, Mathematics and Computer Science department chair at Santa Clara University’s College of Arts and Sciences, USA. The four organized workshops were Workshop 1 “Prototyping for IoT Projects with Arduino and ProtoPie” instructed by Annie Sungkajun, Assistant Professor of Graphic Design and Creative Technologies in Wonsook Kim School of Art at Illinois State University; Workshop 2 “Basics of Gaze-based Interactivity with VIVE Pro Eye” instructed by Masson Smith, Lecturer and PhD Candidate at Texas A&M University; Workshop 3 “How to use VR Game Design to Teach Concepts in Sustainability” instructed by Brian Beams, Imaginarium XR Lab Manager and Lecturer at Santa Clara University; and Workshop 4 “How to use P5.js to Generate Ideas for your Art Practice” instructed by Krista Fay, an Independent, oil painter, digital artist, and art instructor. The invited talk titled “Art Access in Pandemic Times: 3D Digitization Process of an Art Gallery” was given by Rogério Augusto Bordini and Cesar Augusto Baio from the University of Campinas, Brazil. The demo entitled “MIST: You

play, I draw” was given by Juliana Shihadeh from Santa Clara University’s Computer Science and Engineering department.

The Organizing Committee did a tremendous job in putting together the three-day conference under the leadership of General Chair, Navid Shaghaghi, who envisioned this year’s conference theme and direction with Steering Committee Chair, Imrich Chlamtac, and led the conference into new avenues not explored by previous iterations of the INTETAIN conference. Coordination with the Steering Committee Chair, Imrich Chlamtac, was essential for the success of the conference as his constant support and guidance were greatly appreciated especially given the global hardships faced due to the COVID-19 pandemic.

The outstanding Technical Program Committee (TPC), led by Co-chairs Ahmed Amer, Mehdi Dastani, Mohamad Eid, Brian Green, Mohd Sunar, and Shihan Wang, managed the peer-review process and put together a high-quality and high-impact technical program. Workshops Chair Brian Beams coordinated workshops that were truly exhilarating and informative. Local Co-chairs Reza Shariatmadari and Allan Baez Morales made the conference possible through well programmed and executed scheduling and video conferencing technology. Posters Track Chair Jaykumar Sheth put together a magnificent poster session and competition with a Healthcare Innovation Excellence award sponsored by SCU’s BioInnovation and Design Lab, a Most Interdisciplinary and Innovative award sponsored by SCU’s Ciocca Center for Innovation and Entrepreneurship, a Most Humanitarian award sponsored by SCU’s Frugal Innovation Hub (FIH), and a Most Mathematically Rigorous award sponsored by SCU’s Mathematics and Computer Science Department. Demos Chair Simon Flutur arranged for a most touching demonstration on the intersection of art and technology. Web Chair Yu Yang Chee, Publicity and Social Media Co-chairs Heidi Williams and Dagmar Caganova, and Sponsorship and Exhibits Chair Prashanth Asuri brought together authors, contributors, and participants from around the world.

Very special thanks are due to Publications Chair Fabrizio Lamberti, for making the contributions of INTETAIN 2020 accessible in this conference proceedings volume as well as to Conference Manager Viltare Platzner, for her extreme dedication and hard work in bringing INTETAIN 2020 to life; to all of the keynote speakers who awed and educated the conference attendees; and to all of the authors who submitted their papers and posters to the conference, without whom none of this would have been possible.

We strongly believe that INTETAIN 2020 provided a great forum for all researchers, developers and practitioners to discuss all science and technology aspects that are relevant to how technology is changing the way in which humans interact with reality. We also expect that the future iterations of the INTETAIN conference will be as successful and stimulating, as indicated by the contributions presented in this volume.

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