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Preface

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PREFACE

This proceedings consists of the peer-reviewed papers from the 2nd International Conference on Robotics, Intelligent Automation and Control Technologies (RIACT 2021), which was organized by the School of Mechanical Engineering at Vellore Institute of Technology, Chennai, India on September from 23rd to 25th, 2021. However, due to the COVID 19 pandemic the conference was held Online. The main objective of RIACT 2021 is to provide a platform for researchers and practitioners from both academic institutions and industries to meet and share cutting-edge developments in the areas of Robot Design, Development and Control, Rehabilitation Robots and Devices, Intelligent Automation and Fault Diagnosis, Agricultural Robots, Underwater Robots, Development of Drones, Control and Supervision Systems, Vision Systems, Actuators and Sensors, Mechatronics Systems, System Interface and Control, Sustainable Technologies and associated disciplines. This conference also provided an opportunity to exchange research evidence and innovative ideas and also the issues related to Robotics and Automation. This proceeding will include presentations on the latest research areas such as Agriculture Drones, Bio Mechanisms for rehabilitation applications and Deep learning in robotics. This conference had gathered an excellent group of keynote speakers from around the globe on different topics such as Engineering Challenges of the AI-Enabled Automation and Process Optimisation for Healthcare and Business Domain, Upcoming future of robotics in protected horticulture, Intelligent Systems: From Smart Manufacturing and Network Perspectives, High-performance surgical and wearable robots for translational medicine, Challenges in Rover Mission, Two-Degree-of-Freedom Control of Flexible Manipulator, Manipulator Rule Generation from Table Data Sets and Its Application, Endurans: Long-endurance sea surveying autonomous unmanned vehicle with gliding capability powered by hydrogen fuel cell, Bio-Inspired Swarm Intelligence with Engineering Applications, K-Learn for Robotics: Kinesthetic and STREMS, Embedded Machine Learning for Decentralized Automation, Real-time decentralized control: Design guidelines and applications, Whole-Body Optimization using Differential Dynamic Programming for Humanoid Robot Applications and How Business Technology Platform Accelerates Your Innovation.

RIACT 2021 was graced with the following eleven keynote speakers namely Professor Alamgir Hossain Vice President & Professor of Artificial Intelligence Cambodia University of Technology & Science (CamTech), Cambodia; Professor M. Osman Tokhi from London South Bank University, London, UK; Dr. Darrel Robertson, Research Engineer at NASA Ames Research Center, USA; Professor Dr.-Ing. Daniel Schilberg from University of Applied Sciences Bochum, Germany; Dr. Fausto Pedro García Márquez, Professor, Castilla-La Mancha University, Spain; Professor Minoru Sasaki from Gifu University, Japan; Professor Hiroshi Sasaki, Department of Basic Sciences Kyushu Institute of Technology, Japan; Professor Vikram Kapila from NYU Tandon School of Engineering, USA; Professor Michael Short from Teesside University, UK; Dr. Asuman Suenbuel from SAP Labs, Silicon Valley, USA; Dr. Hao Su from City University of New York, City College, USA; Dr Tu Nguyen Director of Intelligent Systems Lab, Department of Computer Science, Kennesaw State University (KSU), USA; Dr. Milena Y Krumova, from European Institute for Technologies, Education and Digitalisation, Bulgaria; ing. EJ (Erik) Pekkeriet from Agro Food Robotics, Wageningen University & Research, Netherlands.

This year, RIACT 2021 had more than 392 participants from around the globe. A total of 205 research articles were submitted and based on the double-blind peer review process 52 full length papers were accepted to be published with IOP Conference Series: Journal of Physics after presentations. The evaluation of all the papers was performed based on the reports from anonymous reviewers.



We would like to take this opportunity to deeply express our heartfelt appreciation to Dr. G. Viswanathan, Founder and Chancellor, Vellore Institute of Technology; Shri Sankar Viswanathan, Vice President, Vellore Institute of Technology; Dr. Sekar Viswanathan, Vice President, Vellore Institute of Technology; Shri G V Selvam, Vice President, Vellore Institute of Technology; Ms. Kadhambari S. Viswanathan, Assistant Vice President, Vellore Institute of Technology; Dr. Sandhya Pentareddy, Executive Director, Vellore Institute of Technology. Our special thanks to all our Keynote Speakers, Session Chairs, all the Committee Members and Reviewers involved in the technical evaluation of conference papers.

VIRTUAL DISCLAIMER FOR RIACT 2021: As it was uncertain about when COVID-19 pandemic and travel restrictions across the globe would end, the conference was conducted in virtual mode considering the safety of the participants. The conference was not postponed to a later period because the scientific community cannot share their research findings and there would have been a delay in publishing their research work. The virtual conference was organized by Vellore Institute of Technology, Chennai, India during September 23 - 25, 2021 using ZOOM: Video Conferencing platform.

The keynote speakers from across the globe delivered their talk for close to one hour which was based on the theme of the conference. A total of 20 parallel sessions were arranged for the paper presentation by the respective authors in the presence of 2 panel members (session chairs) for each session. Total of 15 minutes for presentation and 5 minutes for discussion was allotted for each paper. At the end of the keynote session, audience were provided 10 minutes to clarify their doubts with the speaker and a member from the organizing committee summarized and thanked the speaker. With regard to the paper presentation, the panel members (session chairs) and audience were given the opportunity to ask questions to the authors regarding their research findings for a duration of 5 minutes. RIACT 2021 had 355 participants and keynote speakers from USA, UK, Germany, Netherlands, Italy, Spain, Japan, Cambodia and Bulgaria. All the submitted papers were initially screened for plagiarism using TURNITIN software and only those papers which had less than 10% plagiarism were selected for presentation in the conference. Moreover, all the presented papers were double blind peer reviewed by two reviewers and the authors were instructed to submit the revised manuscript based on the reviewers comments. RIACT 2021 has been conducted successfully between September 23 & 25, 2021. It has been planned to organize the Third International Conference on Robotics, Intelligent Automation and Control Technologies during October 2022.

Best Regards,

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