About Conference

The Fourth International Conference on Modern Computing Trends and Technology (ICMCTT-IV) 2024 promises to be a milestone event in the field of research. This Collaborative endeavour aims to bring together distinguished Scholars, Researchers, Practitioners, and Students from around the globe to delve into the latest Advancements, Trends, and Challenges. The Conference will feature insightful Keynote Speeches, Panel Discussions, Paper presentations, and Collaborations that drive innovation and progress in our field.

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Abstract Book Proceedings of Fourth International Conference on Modern Computing Trends and Technology (ICMCTT-IV) 2024 - Organized by Department of Computer Application, Kristu Jyoti College of Management and Technology, Chethipuzha P.O Changanacherry, Kerala, India

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Dr. Susheel George Joseph,
Mr. Roji Thomas
Dr. Mohammed H. AlAqad

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Preface

Fourth International Conference on Modern Computing Trends and Technology (ICMCTT-IV) 2024 - Organized by Department of Computer Application, Kristu Jyoti College of Management and Technology, Chethipuzha P.O, Changanacherry, Kerala, India held successfully during November 28th & 29th, 2024. 174 teams from 11 Countries including Nigeria, Indonesia, Egypt, Iraq, Japan, Oman, Philippines, USA, Armenia, Malaysia and PAN India including 20 Indian states from 43 reputed Universities and 82 Colleges were participated in this conference. The objective of this conference is to bring together entrepreneurs, academicians, research scholars and post-graduate students from around the world to encourage, acknowledge and support research in all these areas by providing opportunity for them to exchange and share their experience, fresh concepts, research findings and discuss the pragmatic challenges encountered and solutions adopted in the aforementioned interdisciplinary areas through a wide range of research activities and publications.

During the Conference, As Keynote speakers Dr. Mohammed H. AlAqad, Associate Professor, Hashim Sani Centre for Palestine Studies, Universiti Malaya, Malaysia discussed about The Use of AI in the Academic Peer Review. On second day, Dr. T. C. Manjunath, Dean - R & D and Professor, Department of ECE, Raja Rajeswari College of Engineering, Kumbalgodu, Bengaluru, Karnataka, India discussed about The Recent Advances in the Development of Nano-Machines in Bio-Medical Engineering Applications.

Conference Chair members are Mr. Shanmugasundaram Senathipathi, Consulting Manager, Capgemini America Inc, Chicago, Illinois, USA, Dr. Kavitha Balamurugan, Professor and Head, Department of Electronics and Communication Engineering, KCG College of Technology, Chennai, Tamil Nadu, India, CMA Dr. Natika Poddar, Associate Professor, Finance at St. Francis Institute of Management and Research, Mumbai, India, Dr. S. Durga, Associate Professor, Department of Management Studies, Vignan University, Andhra Pradesh, India, Dr. Ketki Kshirsagar, Associate Professor, Department of E & TC, Vishwakarma Institute of Information Technology, Pune, Maharashtra, India, Dr. Sujithra Muthuswamy, Associate Professor, Department of Data Science Coimbatore Institute of Technology, Coimbatore, Tamil Nadu, India, Dr. A. M. Arun Mohan, Associate Professor, Department of Civil Engineering, Sethu institute of Technology, Virudhunagar, Tamil Nadu, India, and Dr. Monica Bhutani, Associate Professor, Department of Electronics and Communication Engineering, Bharati Vidyapeeth College of Engineering, New Delhi, India. .

10 Oral Sessions are planned and successfully held under the joint efforts of Conference chair members, Presenters and Conference members through online mode. Many recent trend topics are discussed. Best presentations were selected under UG, PG, Research Scholar and Faculty category which were evaluated by Conference chair members as per given rubric sheet. 174 abstracts are included in this proceedings have been classified into 10 focus research areas to corresponding sessions held at the conference. The conference group would like to express their sincere gratitude to all the authors for their dedicated contributions to the proceedings. We would like to extend our thanks to all the technical committee members and reviewers for their constructive comments on all papers. Also, we would like to thank organising committee for their sincere and dedicated work. Finally, we would like to thank the RSP Research Hub for producing this volume.

We strongly believe that the participants of ICMCTT 2024 have enjoyed a wonderful and fruitful time during the conference.

ICMCTTAP119

Intelligent Valve Control Mechanism for Irrigation in Precision Agriculture

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ABSTRACT

Precision agriculture is essential to solving the world's food and water crises. This article presents Intelligent Irrigation System which is an innovative technology for increasing the efficiency of water use in agriculture. Our solution differs from traditional systems in that it combines IoT-sensitive sensors, predictive analytics. and mobile app interactions for real-time, research-based water management. The system uses a Raspberry Pi to collect sensor data such as soil moisture, temperature, humidity and rain sensor. A prediction algorithm analyzes these parameters to realistically predict water needs. Prediction allows for the deployment of precise valve control mechanisms. which automatically delivers water to plants according to their specific needs. All sensor readings and predictions are stored in Firebase, making data capture and retrieval easier. Flutter-based mobile applications provide farmers with easy-to-use tools to monitor and monitor their systems remotely. What sets this product apart is its adaptive data-driven technology. which not only reduces water wastage but it also ensures the health of crops under changing climate conditions. By using cost-effective hardware and scalable cloud infrastructure, the system is designed to be accessible to both small and large farmers. In times of uncertain weather and water shortages this smart irrigation system addresses a critical need for sustainable agriculture by integration of IoT, machine learning and innovative user experience to make agricultural technology support timely and changeable.

Keywords: Raspberry PI , Machine Learning , Precision Agriculture , Intelligent Irrigation in Agriculture.