

NAVIGATING THE FUTURE : UNVEILING THE DYNAMICS OF INDUSTRY 5.0

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PREFACE

In an era marked by technological revolutions, the concept of Industry 5.0 stands at the forefront, promising a paradigm shift in the way industries operate. As we navigate the ever-evolving landscape unravel the intricacies and possibilities that Industry 5.0 holds. “Navigating the Future” invites all attendees to be active contributors to the ongoing dialogue that shapes the future on industries, fostering a community of forward – thinkers and innovators who are well – equipped to drive positive change in the world of Industry 5.0

Industry 5.0 is regarded as a fifth industrial revolution in which consumers could satisfy their individual requirements as per the tastes and expectations. Although the repetitive tasks are done by robots in Industry 4.0 which is at the mass customization level, Industry 5.0 aims to perform mass personalization with help of Artificial Intelligence.

Industry 5.0 is expected to revolutionize the production process with higher autonomy to collaborative robots. Industry 5.0 is the futuristic industrial revolution which is expected to bring in more creativity and innovation in the products by allowing robots to perform repetitive tasks. It is expected to utilize the creative intellectual capability of human optimally. Moving from mass production to custom manufacturing techniques and production system digitization and intelligentization.

In the lines if above, the PG & Research Department of Commerce has organized two days Conference on the theme “Navigating the Future: Unveiling the Dynamics of Industry 5.0” with the following objectives, to understand and gain knowledge on the functional areas of Industry 5.0; to provide a holistic understanding of the multifaceted dynamics of Industry 5.0 and to enhance the research aptitude among the academicians, scholars towards dynamic changing environment.

To get more insights on the above theme, research articles were invited for presentation and publication. The Department has received fifty (50) articles on various sub-themes from Professors and research scholars of various colleges in Tamil Nadu, Kerala and Karnataka. The Editorial Board has reviewed and edited all the papers scrupulously and meticulously with plagiarism check.

The Editorial Board has recommended and forwarded all the articles in the form of Edited Book with ISBN Publication Number for disseminating the knowledge to all the stakeholders of Higher Education Institutions and Industry concerned.

This book is a comprehensive guide for understanding and utilizing on various themes to generate indepth knowledge on it and suitable for research scholars as well as corporates. We hope that you will find this book informative and inquisitive as much as we learnt it.

Editorial Board.

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ISSUES AND CHALLENGES OF INTERNET OF THINGS

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Abstract

The globe is currently seeing a tremendous rush towards modern technology, yet specialized businesses are suffering from a horrible information rush. By adding hardware and/or software to make objects smarter and able to communicate with each other and participate effectively in all aspects of daily life, technology is moving from the so-called Internet of things to the Internet of objects, which is the integration of things with the Internet. This will enable new forms of communication between people and things, as well as between things themselves, and transform traditional living into a high-class way of life. However, in order to reach their full potential, a number of obstacles and problems still need to be resolved. These must be seen from a variety of angles.

Introduction

IoT stands for "Internet of Things," a term coined by Kevin Ashton speech made in 1999 to Proctor & Gamble. He is one of the founders of The Automatic Recognition Lab of the Massachusetts Institute of Technology invented the use of RFID (used in barcode detectors) in the field of supply chain of command. Additionally, he established Zensi, a business that produces energy-sensing and monitoring equipment. An developing topic of technical, social, and economic significance is the Internet of Things, durable goods, automobiles and trucks, industrial goods. The combination of sensors, commonplace items, and infrastructure with internet access and potent data analysis skills promises to revolutionize the way we work and live.

Main Issues and Challenges of IoT

The sharing of IoT-based systems in many facets of human life and the diverse technologies involved in data transfer between embedded devices made it complicated, creating a number of issues and difficulties.

Safety

Unsecured Internet of Things devices and server rooms might operate as possible entry points for cyberattacks and expose user data to theft by not providing enough security for the data. Other factors that contribute to this difficulty include the widespread use of heterogeneous Internet of Things devices, the capacity of certain devices to connect to one another automatically, and the possibility of using these devices in unsecured settings.

Confidentiality

The full potential of the Internet of Things is dependent on policies that uphold each person's right to privacy over a broad spectrum of circumstances. The data of the user privacy that IoT devices offer can open up amazing and unique opportunities for IoT users, yet worries about potential risks and privacy may prevent IoT from being fully adopted.

Cooperation and Guidelines

Interoperability is the capacity to transfer data between different Internet of Things platforms and devices. This information-sharing is not predicated on publicly available hardware and software. Because of the varied nature of the technology and the different approaches utilized to construct IoT, interoperability is an issue.

The use of IoT devices intensifies already-existing legal difficulties surrounding the Internet and poses a number of new regulatory and legal questions. The queries are extensive, and the rate of development in IoT technology is frequently faster than the capacity of related laws, regulations, and policies to keep up. Many real-world issues have been resolved with the growth of the Internet of Things, but it has also led to serious ethical and legal issues such data security, privacy protection, trust, security, and data usability.

Emerging Markets and Progress

The Internet of Things has a great deal of promise to benefit emerging and developing nations socially and economically. This covers a variety of topics, including sustainable agriculture, water quality and use, manufacturing, healthcare, and environmental management. The Internet of Things thus shows potential as a tool for accomplishing the Sustainable Development Goals of the United Nations.

Conclusion:

The Internet of Things (IoT) has brought about a lot of technological changes in our everyday lives, that help make our lives more efficient and comfortable through the use of new technologies and applications. 32 There is a lot of potential for the Internet of Things to bring about social and economic benefits to individuals, society, and the economy. However, the issues and challenges associated with the Internet of Things must be considered and addressed in a straightforward manner.

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