# Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

# 2nd INTERNATIONAL CONFERENCE

# ON

# ROBOTICS, INTELLIGENT AUTOMATION AND CONTROL TECHNOLOGIES

# (RIACT 2021)

**Theme: Design, Intelligent Automation, Control, Communication of Robots & Machines**

## Sep 23-25, 2021

### In Association with

### Teesside University

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### robotics
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# SCHOOL OF MECHANICAL ENGINEERING

# VIT CHENNAI, TAMILNADU, INDIA

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## VIT – A place to learn; A chance to grow

## ABOUT VIT

Founded in 1984, VIT has made a mark in the field of higher education in India imparting quality education in a multi-cultural ambience, intertwined with extensive application-oriented research. VIT was established with the aim to provide quality higher education on par with International Standards. It persistently seeks and adopts innovative methods to improve the quality of higher education on a consistent basis. VIT was established by well-known educationalist and former parliamentarian, Dr. G. Viswanathan, Founder and Chancellor, a visionary who transformed VIT into a center of excellence in higher technical education. Govt. of India recognized VIT as an Institution of Eminence (IoE). ARIIA, Govt. of India recognized VIT as a No. 1 Private University for Innovation. MHRD, Govt of India ranked VIT as No.18 among the Engineering Institutions (NIRF-2019 ranking). VIT Chennai is ably spearheaded by Dr. Sankar Viswanathan, Vice President, Ms Kadhambari S Viswanathan, Assistant Vice President, Dr. Rambabu Kodali, Vice Chancellor and Dr. V. S. Kanchana Bhaaskaran, Pro-Vice Chancellor. They share in the mission to make VIT a global center towards academic and research excellence.

The focus is to:
- To maximize the Industrial connectivity
- To create Centers of Excellence in contemporary areas of research.
- To enrich technological and managerial human capital nurtured in a multicultural ambience.
- To provide a common platform for the agglomeration of ideas of personnel from various walks of life for learning enrichment.
- To create opportunities and exploit the available resources to benefit industry/society.
- To encourage participation in the national agenda of knowledge building.
- To foster international collaborations for mutual benefit in areas of research.

# ABOUT SCHOOL

The School of Mechanical Engineering (SMEC) at VIT Chennai was established to impart state-of-the art education, training and research in the field of Mechanical Engineering. SMEC provides undergraduate program (B.Tech) in Mechanical Engineering and postgraduate program (M.Tech) in CAD/CAM and Mechatronics Engineering and Ph.D. / M.S. (Research). The School has highly qualified faculty members with good theoretical background and valuable industrial experience in diverse fields like Thermal and Automotive Engineering, Design and Manufacturing, Mechatronics and Material sciences. The school has over 90% of teaching faculty with doctorates giving high emphasis for research along with innovative teaching methods which helps to involve students in research and project based learning in the school. The research outcomes in the form of publications and patents are the testament to the world class, global standard infrastructure and research laboratory facilities available in the school. The outreach programs of the school include organizing Value Added Programs and workshops for teachers, industry personnel and students for various organizations in relevant areas periodically.

# ABOUT CONFERENCE

The main objective of this International Conference on Robotics, Intelligent Automation and Control Technologies (RIACT 2021) is to provide a virtual platform to researchers and practitioners from both academic institutions and industries to meet and share cutting-edge developments in the areas of Robotics, Automation and associated disciplines. This virtual conference also provides an opportunity to exchange research evidence and innovative ideas. RIACT 2021 will include presentations on the latest research on Artificial Intelligence, Nano-robots, Swarm robotics, Image & Speech processing, Underwater robotics, Agricultural robots,

Aerial robotics and Military robotics. This conference will gather an excellent group of plenary speakers from around the globe on different topics in the robotics and automation domains. We invite you to join RIACT 2021, where you are sure to have a meaningful participation with scholars and academicians from around the world.

Agriculture is the backbone of India. Implementation of robotics in agriculture is gradually increasing to maximize the productivity in agriculture by minimizing the labor cost. Some of the major problems in the Indian agricultural are rising of input costs, availability of skilled labors, and crop monitoring. Implementation of automation in agriculture could help farmers to reduce their efforts.

Humanoid robotics is an active field of research, focused on building robots that would mimic human beings and perform complicated tasks. Recently, they have shifted their main interest to human-symbiotic robotics in which human beings receive services from robots or co-bots performing collaborative tasks.

Medical robotics is an interdisciplinary and relatively young field that focuses on developing electromechanical devices for clinical applications. Robotics in the field of medical procedures is implemented to improve stability and precision for the surgical devices.

Underwater robotics applications have extensively grown in the past decades both for scientific investigations and industrial needs. Technological improvements in the design and development of the underwater vehicles aids in studying and measuring the concentration of various chemical composition in water by affixing various sensors to the robot.

Intelligent automation systems (autonomous car), is a combination of artificial intelligence (AI) and automation. These systems adapt to the environment as they go and synthesize the collected information, analyze and make decisions accordingly to guide the vehicle to avoid collision and maintain the vehicle on course till the targeted destination is reached. A certain level of AI, computer vision, and Image processing is implemented in the vehicles to process the images of the signs and textures.

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# ONLINE PLATFORM FOR RIACT 2021

MICROSOFT TEAMS / ZOOM

# THEMES OF RIACT 2021

- ➢ Robot Design, Control & Communications
- ➢ Mobile & Autonomous Robots
- ➢ Intelligent Automation Systems
- ➢ Industry Internet of Things
- ➢ Robust & Adaptive Control Systems
- ➢ Automation in Life Sciences

# CALL FOR ORIGINAL RESEARCH WORK IN KEY TOPICS

# (BUT ARE NOT LIMITED TO) RELATED TO RIACT 2021

| | | |
|---|---|---|
| • Robot Design, Development & Control | • Intelligent Automation Systems | • AI in Robotics |
| • Modelling & Simulation | • Intelligent Transportation | • Industrial IoT |
| • Kinematics & Dynamics | • Intelligent Fault Detection and Diagnosis | • Deep learning in Robotics |
| • Robotic Perception | • Intelligent Components for Control | • Cognitive Automation |
| • Mobile & Autonomous Robots | • Industrial Networks and Automation | • Biologically inspired Control systems |
| • Rehabilitation Robots & Devices | • Control and adaptation Techniques | • SLAM |
| • Humanoid & Smart Robots | • Automation in Life Sciences | • ROS |
| • Military Robots | • Robust/Adaptive Control of Robotic System | • Image Processing & Vision Systems |
| • Service & Medical Robots | • Optimization and Optimal Control | • Human-Machine Interface |
| • Agricultural Robots | • Motion Planning and Control | • Actuators & Sensors |
| • Space & Underwater Robots | • Cognitive Control Architectures, Compliance and Impedance Control | • Computer and microprocessor-based control |
| • Collaborative Robots | • Control and Supervision Systems | • CAD/CAM/CAE |
| • Micro/Nano Robotics | • Vehicle Control Applications | • Mechatronic Systems |

# DATES TO REMEMBER

| | |
|---|---|
| **RIACT 2021 CONFERENCE DATE** | **: Sep 23-25, 2021** |
| **ABSTRACT SUBMISSION DEADLINE** | **: Aug 5, 2021** |
| **FULL LENGTH PAPER SUBMISSION DEADLINE** | **: Aug 12, 2021** |
| **NOTIFICATION OF ACCEPTANCE** | **: SEP 5, 2021** |
| **LAST DATE FOR PAYMENT OF REGISTRATION FEE** | **: SEP 12, 2021** |

# CLICK THE BELOW LINK TO REGISTER BEFORE SUBMISSION OF ABSTRACT

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# Publications

- ➢ **MDPI Robotics**
  **(With Discounted OA Fees)**
- ➢ **Other Scopus indexed Journal details will be updated soon**

# AFTER CONFERENCE PROCEEDINGS

Authors of the best papers will be invited to submit extended versions of their work to the **MDPI Robotics** journal with discounted OA fees. However, the Evaluation and Peer Review will be managed by the series editors.

# E-Certificate

Will be provided **only to all the paid registered participants <u>within 2 weeks</u>** from the date of conference.

# ABSTRACT AND FULL LENGTH PAPER SUBMISSION

- After submission of the **Online Registration Form**, the **templates** for your Abstract and Full length paper **will be emailed to you**.
- **Strictly adhere to the provided template** for your Abstract and Full length paper preparations.
- Strictly restrict the **Abstract to 1 page** and **Full length paper to 5 pages**.
- Only **Original Research Work** will be considered for review.
- All submitted papers will be first **checked for Plagiarism** and then only **sent for review.**
- Papers with **more than 10% plagiarism** will be **REJECTED**.

# FOR FURTHER INFORMATION PLEASE CONTACT,

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