



K.RAMAKRISHNAN COLLEGE OF ENGINEERING

An Autonomous Institution

Permanently Affiliated to Anna University Chennai, Approved by AICTE New Delhi,
ISO 9001:2015, 14001:2015 certified institution, Accredited by NBA and with A grade by NAAC

Samayapuram, Tiruchirappalli – 621 112, Tamilnadu, India.



**"Tell me and I forget. Teach
me and I remember. Involve
me and I learn."**

2023 - 2024

**JAN -JUNE
ISSUE -2**



Krce.ac.in



Dr. K. Ramakrishnan

CHAIRMAN

Dr. K. Ramakrishnan, the esteemed Chairman of our institution, is a visionary leader whose dedication, discipline, and dynamic outlook serve as a constant source of inspiration for the students of the Electronics and Communication Engineering (ECE) Department. A proud alumnus of Annamalai University with a B.E. in Production Engineering, he has devoted his efforts to transforming this rural region into a center of technological and educational excellence. His commitment to hard work, innovation, and leadership motivates ECE students to strive for excellence in their academic and professional pursuits, inspiring them to become creative thinkers, responsible engineers, and future leaders who contribute meaningfully to society.

Dr.S.Kuppusamy



EXECUTIVE DIRECTOR

Dr. S. Kuppusamy, the Executive Director of our institution, is a passionate academician whose dedication and commitment to excellence have shaped his career in education. He holds a B.Sc. in Electronics from Erode Arts College, an MBA from Kongu Engineering College, and a Ph.D. in Management from Bharathiar University, Coimbatore. His blend of technical knowledge and leadership inspires the Electronics and Communication Engineering (ECE) students to pursue innovation, discipline, and success in their academic and professional paths.



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Dr.D.SRINIVASAN

PRINCIPAL

Dr.D.Srinivasan, The Principal of K.Ramakrishnan College of Engineering, Tiruchirappalli, is a vibrant leader with his ground-breaking approach and proven administrative process produces many young engineering professionals to this society. He received his Ph.D. and Post-Graduation in Manufacturing Technology from the nation's top grade institution NIT, Trichy. Education is not just a process of giving knowledge for a future job but a lifelong process which builds an understanding of moral and ethical values to guide one's life in a right path. KRCE not only focuses on the academic front, but also helps in the development of a student's personality, extra-curricular activities and over all perspective. Everything that makes a good institution - well equipped R&D Cells, Lab facilities for all the departments, Wi-Fi enabled campus, well stacked library with digital facility, career guidance, unique teaching methods, training for competitive examinations, liberty to think and express themselves all are available to mould them to face the challenges confidently

Dr.M.MAHESWARI



HEAD OF THE DEPARTMENT

I am deeply thankful to the Board of management, Director Principal, and the Heads of various departments. Faculty members for their consistent support and active involvement in motivational activities of our department. I extend my heart full thanks to the editorial committee members and students for their tireless effort towards releasing this magazine. Choosing electronics field as profession needs challenging creative and extraordinary mind it gives me pleasure to lead such innovative students, who are the future experts of India



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DEPARTMENT OF ECE VISION

VISION

To be distinguished as a prominent program for Electronics and Communication Engineering Studies by preparing students for Industrial Competitiveness and Societal Challenges.

MISSION

M1: To equip the students with latest technical, analytical and practical knowledge.

M2: To provide vibrant academic environment and Innovative Research culture.

M3: To provide opportunities for students to get Industrial Skills and internships to meet out the challenges of the society.

The PEOs of the programme are,

PEO1: Graduates will be competent enough to design, develop and integrate complex industrial products for modern electronics and communication systems.

PEO2: Graduates will be able to propose research oriented, industry relevant design solutions in state-of-the-art electronics and communication domains.

PEO3: Graduates will be able to engage in start-up and entrepreneurial activities developing innovative prototypes for the challenging needs of the society.

PROGRAM SPECIFIC OUTCOMES (PSOs)

PSO1: Students will qualify in National level Competitive Examinations for Employment and Higher studies.

PSO2: Students will have expertise in the design and development of Hardware and Software tools to solve complex Electronics and Communication Engineering problems in the domains like analog and digital electronics, embedded and communication systems.



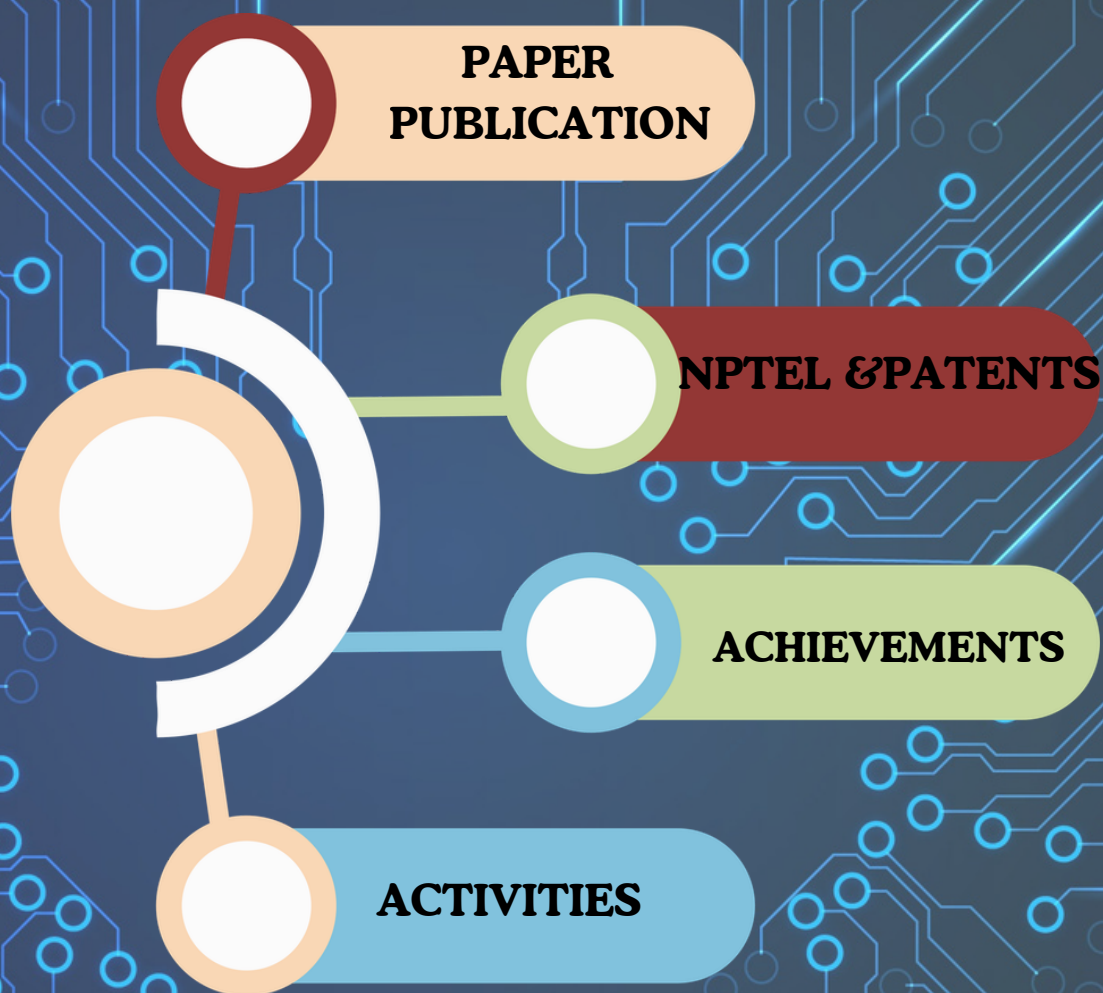
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**PAPER PUBLICATION
STUDENTS 23-24**

TOTAL PUBLICATION:05



M. Mohamed Kamil Marsook ACS - Fed Antenna Loaded with Resonator for Dual band Applications 10.1109/ICEEICT61591.2024.10718605



Nikitha R S Design of orthogonal time frequency space (OTFS) system using ZAK transform



Abarita G Half mode SIW antenna for 5G using ANN operation



Nachiappan S Animal Detection and repellent system for crop protection



Abinath S Design and development of ACS fed antenna for wideband application



**PAPER PUBLICATION
STAFF 23-24**

TOTAL PUBLICATION:48

- ★ Dr.H.Sudarsan Design Of Microwave Metamaterial Absorber for Ku-, X-, And C-Band Applications
- ★ S.Janu Priya Acs Fed With Fractal Antenna Using Dual Band Operation for Wireless Application
- ★ S.Janu Priya Multiband E Shaped Slotted Antenna of Substrate Integrated Waveguide for Wireless Application
- ★ Mr. N. R. Nagarajan Optimizing Chemical sensing Performance: A New Terahertz Waveguide Plasmonic Sensor with Hybrid refractive Index Integration
- ★ Mr. N. R. Nagarajan Enhancing Stock Price Predictions Through
- ★ Dr.G.Kalpanadevi A Novel Strategy to Segment the Retinal Layers Using Convolutional Neural Network
- ★ Dr. M. Vinoth THz Microstrip Antenna for Terabit Wireless Local Area Networks
- ★ Dr. M. Vinoth Deep Reinforcement Learning for Comprehensive Route Optimization in Elastic Optical Networks Using Generative Strategies
- ★ Dr. M. Vinoth A 2x1 Wearable Periodical Array Antenna for IEEE Standards

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



PAPER PUBLICATION STAFF 23-24

TOTAL PUBLICATION:48

- ★ Dr.K.Priyadarshini Hybrid Rnn-Ffbpnn Optimized 1 Dr.K.Pr iyadars hini with Glowworm Swarm Algorithm for Lung Cancer Prediction
- ★ Dr.K.Priyadarshini Synthesis And spectral Characterization of High-Performance Super Capacitor Zif-67 @Rgo Nanocomposite Electrode Materials
- ★ Dr.K.Priyadarshini A Cloud-Connected Digital System for Type-1 Diabetes Prediction Using Time Series Lstm Model
- ★ Dr.R.Samson Daniel Artificial Neural Network-Based Multiband M-Negative Hilbert Curve Fractal Antenna Using RSRR Unit Cell
- ★ Dr.R.Samson Daniel A CPW Fed Monopole Antenna Loaded with Metamaterial Unit Cell for Wireless Application
- ★ Dr.S.Stephe Adaptive Wind Driven Optimization Based Energy Aware Clustering Scheme for Wireless Sensor Networks
- ★ Dr.S.Stephe Enhancing Brain Tumor Detection and Classification Using Osprey Optimization Algorithm with Deep Learning on MRI Images
- ★ Dr.C.Jeyalakshmi Tts System for Deafened and Vocally Impaired Persons in Native Language

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



PAPER PUBLICATION STAFF 23-24

TOTAL PUBLICATION:48

- ★ Mr.A.B.Balakumar Human-Robot Collaboration in The Workplace: Assessing the Impact on Employee Well-Being and Productivity
- ★ Mr.A.B.Balakumar Real-Time Anomaly Detection In 5g Networks Through Edge Computing
- ★ Mr.A.B.Balakumar Two Port Slotted MIMO Antenna for Wireless Sensor Networks
- ★ Ms.Radha N An Empirical Analysis of Concatenated Polar Codes For 5g Wireless Communication
- ★ Ms.Radha N Addendum Parity Check Codes for Futuristic Wireless Communications
- ★ Mrs.A.VIDYA An Intelligent Approach for Fault Detection in Solar Photovoltaic Systems Based on Bert-Bigru Network
- ★ Mr.Syed Husain Creating Hybrid Index Alert Messages Based on Wild Animal Activity Detection Using Hybrid Deep Neural Networks
- ★ Mr.Syed Husain An Exploration of The Performance Suing Methods Random Classifier Ensemble Utilizing Forest for Diabetes Detection

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



PAPER PUBLICATION STAFF 23-24

TOTAL PUBLICATION:48

- ★ Mr.Syed Husain Outperforming Cryptocurrency Price Prediction Using Deep Reinforcement Learning Approach
- ★ Mr.Syed Husain An Approach Efficient for Obstacle Avoidance and Navigation In Robots
- ★ Mrs.J Roselin Suganthi Evaluation Of Muscle Fatigue Based on SEMG Using Deep Learning Techniques
- ★ Mrs.J Roselin Suganthi Pattern Recognition for EMG Based Forearm Orientation and Contraction in Myoelectric Prosthetic Hand
- ★ Mr.T.Muruganantham Deep Learning Based Autonomous Transport System for Secure Vehicle and Cargo Matching
- ★ Mr.T.Muruganantham A Novel Approach for Electricity Load Forecasting Using Hybrid Deep Learning Models
- ★ Mr.T.Muruganantham Development Of Deep Neural Framework for Human Activity Recognition
- ★ Mr. K. Vigneshwaran Deep fore: A Deep Reinforcement Learning Approach for Power Forecasting in Renewable Energy Systems

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PAPER PUBLICATION STAFF 23-24

TOTAL PUBLICATION:48

- ★ Mr. K. Vigneshwaran Melanoma Malignancy Prognosis Using Deep Transfer Learning
- ★ Mr. K. Vigneshwaran Substrate Integrated Waveguide Antenna with Slots for Multiband Operation Using ANN
- ★ Mr. K. Vigneshwaran Predicting Student Performance and Its Outcomes in the Modern Education Systems Using Attention Based BIRNN And CNN Method
- ★ Ms.R.Mahima A Comparative Analysis of the Most Commonly Used Activation Functions in Deep Neural Network
- ★ Ms.R.Mahima Reconfigurable Rounding Based Approximate Multiplier for Floating Point Numbers
- ★ Mr.R.Balamurugan Emotion-Driven Activity Detection: Detecting Activities Perception Through Facial Feature Analysis in Educational Environments
- ★ Mr.R.Balamurugan Design Of High Efficient Low Power Static Logic Circuit Using Sg Finfet
- ★ Mr.R.Balamurugan Performance Analysis Microstrip of Patch Antenna for Wireless Communication Systems

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PAPER PUBLICATION STAFF 23-24

TOTAL PUBLICATION:48

- ★ Mr.R.Balamurugan Security Based Low Density Parity Check Encoder For 5g Communication
- ★ Ms.P.Malini An Efficient Full Adder by Investigating XOR And XNOR Logics with PMOS And NMOS
- ★ Ms.P.Malini Wireless Sensor Network-Based Intrusion Detection Technique Using Deep Learning Approach of CNN-Gru
- ★ Ms.P.Malini An Efficient Implementation of Modified Digital Synapse Design for Neural Network
- ★ Ms.S.Rajapriya Half Mode Substrate Integrated Waveguide Antenna Embedded with Slots for Multiband Operations
- ★ Ms.S.Rajapriya Multiband Planar Antenna Employing Open Complementary Split Ring Resonator Metamaterial Element
- ★ Mr.M.Karthick Optimizing Energy Usage and Data Storage in Industrial Iot Settings Through Heuristic-Based Data-Rate Processors



NPTEL 23-24

- No of Certificate Received - 29
- Percentage of completion - 85.29

★ **No of Students completed : 16**

Certificate Category:

- Elite + Silver - 5 
- Elite - 29 
- Successful Completion - 98



NPTEL 23-24

Academic Year	No. of students registered	No. of students completed	Certification Category
(2023-24)	141	132	Elite+ Silver -5 Elite-29 Successful completion-98

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

PATENT PUBLISHED 23-24

S.NO	Name Of the Faculty	Topic	Cbr Number/Patent Number/Applicati on Number	Cbr Date/Status
1	Dr.M.Maheswari R.B.Shreyahroshini	A Magnetic Pendrive system	202441011385	03/08/2024
2	Ranjani J R. S .Varsini Dr. M. Maheshwari Dr. G. Kalpanadevi S.H. Shanawaz G. Dhanush	A System For Testing Bio Lavatory Sample For Abdominal tendency Affected People	202441011384	03/08/2024
3	Dr.H.Sudarsan	Real time early warning systems in education: A Deep Learning Perspective	202441022028	29/03/2024

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



PATENT PUBLISHED 23-24

S.N O	Name Of the Faculty	Topic	Cbr Number/Patent Number/Applicati on Number	Cbr Date/Status
4	Dr.M.Vinoth Dr.B.Viswanathan Mr.N.R.Nagarajan Mr.K. Vigneswaran	Annular Hexagon and Linear Square Ring Slot Antenna for 5G V2X Application	383133-001	07/07/2023
5	Dr.M.Vinoth Dr.B.Viswanathan Mr.N.R.Nagarajan	Slot Antenna for 5G V2X Applications	3831134-001	07/07/2023
6	T. Muruganantham N. R. Nagarajan M.Karthick P. Ragul S.Dheepak	System To Filter Waste From River Water	202241042693 A	02/02/2024

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PATENT PUBLISHED 23-24

S.NO	Name Of the Faculty	Topic	Cbr Number/Patent Number/Applicati on Number	Cbr Date/Status
7	J.RoselinSuganthi	Machine learning and deep learning techniques for agricultural yield predictions in changing climates	202441022136	22/3//2024
8	S.Anusuya	The Psychometric Properties And Performances Of Teacher-Made Tests In Measuring Students' Academic Performance: A Machine Learning Approach	202441032266	26/04/2024
9	A. Vidya	Machine Learning-Based Grading System For Open-Answer Questions In Reading Comprehension Assessments	202441027371 A	04/12/2024

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PATENT PUBLISHED 23-24

S.NO	Name Of the Faculty	Topic	Cbr Number/Patent Number/Applicat ion Number	Cbr Date/Status
10	K. Vigneshwaran	Advancing Pedagogy Through Information And Communication Technology (Ict): The Potential Of Mentoring And Mirrored Practice	202441035264 A	05/10/2024
11	K. Vigneshwaran	Artificial Intelligence And Machine Learning: A Model For Enhancing Faculty Performance Reliability	202441035195 A	05/10/2024
12	K. Vigneshwaran	Predictive Analysis Of Students' Academic Performance Based On Internet Usage Using Deep Learning	202441027372 A	04/12/2024

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PATENT PUBLISHED 23-24

S.NO	Name Of the Faculty	Topic	Cbr Number/Patent Number/Applicati on Number	Cbr Date/Status
13	K. Vigneshwaran	Deep Learning Strategies For Forecasting Student Dropout And Academic Excellence In Higher Education	202441020862 A	29/03/2024
14	P.Malini	Predictive Analysis Of Stock Market Trends Using Ai And Machine Learning Techniques	202411035159 A	17/05/2024
15	M. Kalaivani	A Study OnThe Role Of Tourism InThe Reduction Of Poverty And Economic Growth	202441038318 A	31/5//2024
16	K. Vigneshwaran	Mindful Metrics: Utilizing MlTo Mitigate Faculty Stress In Educational Institutions	202441038316 A	31/5//2024
17	Mr.R.Balamurugan	A System By Using Neural Networks For 3d Surface Structure Estimation Based Onreal World Data For Autonomous Systems And Applications	202441012996 A	03/08/2024

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PATENT PUBLISHED 23-24

S.NO	Name Of the Faculty	Topic	Cbr Number/Patent Number/Applica tion Number	Cbr Date/Status
18	Mr.R.Balamurugan	Calibration of Low cost IOT sensors in Environmental Monitoring Network Via ApplicatonOf Machine Learning Techniques	202441028371A	19/04/2024
19	Mr.R.Balamurugan	A Novel Method For Identifying Hidden Pattern In Large Datasets Using Deep Learning Techniques	202441043129A	14/06/2024
20	Mrs.R.Mahima	Machine Learning Approaches For Predicting Teachers' Stress, Teaching Approaches, And Student Academic Outcomes In Higher Education	202441020861 A	29/03/2024
21	Dr.T.Muruganantham	A Time Synchronization method for time sensitive communication in a 5G System	202441047506	20/06/2024
22	Dr.T.Muruganantham	A Robust and Interpretable machine learning model for medical Diagnosis and method thereof	202411026923	31/03/2024

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



ACHIEVEMENT

**S.SUDHERSUN,R.VENKATESH,S.VASUNDARA
OF FINAL YEAR ECE RECEIVED RS.20,000
CASH PRIZE IN START UP MELA 5.0
ORGANIZED BY St. JOSEPH INSTITUTE OF
MANAGEMENT,TRICHY**

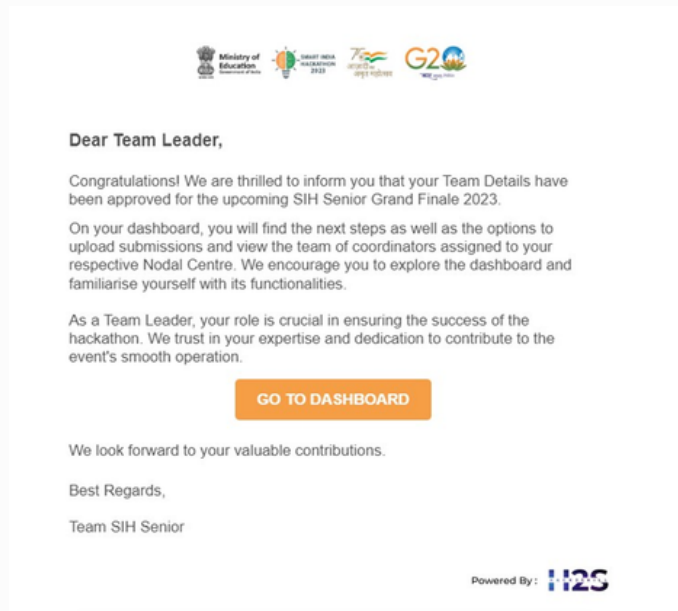
**S.SUDHERSUN, R.VENKATESH, OF FINAL YEAR ECE
RECEIVED IIIrd PRIZE WITH 10,000 CASH AWARD IN
START UP TN –OLIMAYAN 2.0 CONDUCTED BY
KNOWLEDMENT INSTITUTE OF TECHNOLOGY,SALEM**

**S.SUDHERSUN, R.VENKATESH, D.SANTHOSH OF FINAL
YEAR ECE RECEIVED BEST MARKET FIT AND
INNOVATIVE PROJECT AWARD CONDUCTED BY ANNA
UNIVERSITY, CHENNAI**

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



ACHIEVEMENT



**A. PRAVEEN, T. RAKSHITHA, S.
PRIYADHARSHINI, G.
RAJALAKSHMI, S. VASIKARAN,
SHREE RAM RR OF II YEAR ECE
HAVE SHORTLISTED FOR SMART
INDIA HACKATHON IN
HARDWARE EDITION AND THE
EVENT WILL BE HELD FROM
19 TH DEC-23 RD DEC IN LOVELY
PROFESSIONAL UNIVERSITY,
PUNJAB.**

**MAITHREYI V S OF III YEAR ECE B,
WON 1 ST PRIZE IN ZONAL LEVEL
CHESS COMPETITION
(ARIYALUR ZONE)**



ROBOTICS

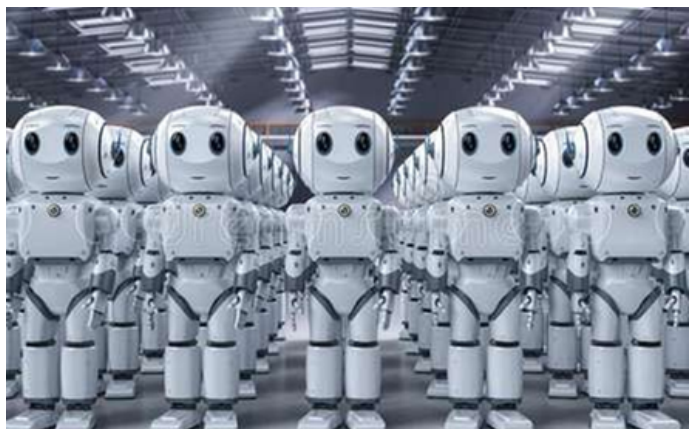
AUTHOURS:ECA2034-HARI PRASATH T & ECB2038-ROHITH RISHAN

ROBOTICS :

Robotics is a branch of engineering that involves the conception, design, manufacture and operation of robots. The objective of the robotics field is to create intelligent machines that can assist humans in a variety of ways. Robotics can take on a number of forms. A robot may resemble a human, or it may be in the form of a robotic application, such as robotic process automation (RPA), which simulates how humans engage with software to perform repetitive, rules-based tasks. While the field of robotics and exploration of the potential uses and functionality of robots have grown substantially in the 20th century, the idea is certainly not a new one.

HISTORY OF ROBOTICS

The term robotics is an extension of the word robot. One of its first use came from Czech writer Karel Čapek, who used the word in his play, *Rossum's Universal Robots*, in 1920. Perhaps about the year 2020 the process will have produced the first broadly competent “universal robots” with lizardlike minds that can be programmed for almost any routine chore. By 2030 second-generation robots with trainable mouselike minds may become possible. . Besides application programs, these robots may host a suite of software “conditioning modules” that generate positive-and negative reinforcement signals in predefined circumstances.



Robots have a wide range of uses and applications across different industries and fields including: Manufacturing and production: Robots are widely used in the manufacturing sector for tasks such as assembly, inspection, and packaging. They can work in hazardous or repetitive environments, reducing the risk of injury to human workers and increasing productivity.

Healthcare: Robots are used in the healthcare for various purposes, such as assisting in surgery, rehabilitation, and elderly care. For example, surgical robots can perform precise movements and reduce the risk of human error during operations. Agriculture: Agricultural robots are used for tasks such as planting, harvesting, and monitoring crops. They can help increase efficiency and reduce the need for manual labor in agriculture. Retail and logistics: Retail and logistics robots are used for tasks such as inventory management, order fulfillment, and customer service. They can help increase efficiency and reduce costs in these industries. Space exploration: Robots are used for space exploration, including missions to Mars and other planets. They can perform tasks such as collecting and analyzing data, drilling for samples, and mapping the terrain. Search and rescue: Robots are used in search and rescue operations, where they can access dangerous or difficult-to-reach areas to search for survivors or provide assistance.

Military: Robots are used in military operations for tasks such as reconnaissance, surveillance, and bomb disposal.

ADVANTAGE

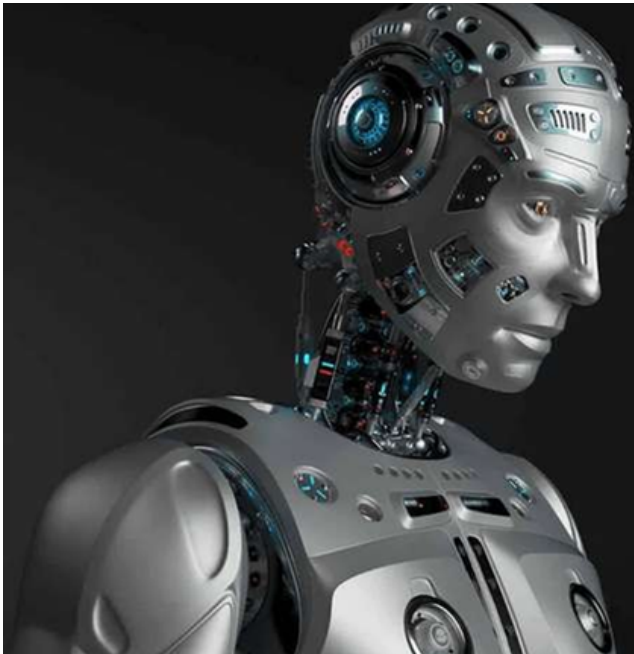
There are several advantages of robotics, some of which are:

1. Precision: Robots can perform tasks with high precision, accuracy, and repeatability that is difficult for humans to achieve. They can carry out tasks with consistent quality and precision without getting tired or making mistakes.
2. Efficiency: Robots can work continuously without taking breaks or getting tired, leading to increased productivity and efficiency. They can also perform tasks that are too dangerous or tedious for humans to undertake.
3. Cost Savings: Robots can help organizations reduce labor costs by automating various tasks. They can also help reduce production costs by minimizing scrap and rework.
4. Flexibility: Robots can be programmed to perform a wide range of tasks, making them highly adaptable to changing production needs. They can also perform tasks in hazardous or difficult-to-reach areas.

DISADVANTAGES :

High Cost: One of the major disadvantages of robotics is the high cost of design, manufacturing, and implementation. The advanced robotics technology is expensive in every aspect, from purchasing to maintenance, and requires a significant financial investment.

1. Lack of Flexibility: Robots are designed to perform specific tasks, and are not easily adaptable when it comes to new, non-standard jobs. They need to be reprogrammed or redesigned to make changes within their function, unlike human workers who can easily adapt to new challenges.



CONCLUSION

Today we find most robots working for people in industries, factories, warehouses, and laboratories. Robots are useful in many ways. For instance, it boosts economy because businesses need to be efficient to keep up with the industry competition. Therefore, having robots helps business owners to be competitive, because robots can do jobs better and faster than humans can, e.g. robot can build, assemble a car. Yet robots cannot perform every job; today robots roles include assisting research and industry. Finally, as the technology improves, there will be new ways to use robots which will bring new hopes and new potentials.

Dr.K.RAMAKRISHNAN

CHAIRMAN

Dr.S.KUPPUSAMY

EXECUTIVE DIRECTOR

Dr.D.SRINIVASAN

PRINCIPAL

Dr.M.MAHESWARI

HEAD OF THE DEPARTMENT

VINNY CLARET (IV YEAR ECE 'C' SECTION)
ROHITH RISHAN (IV YEAR ECE 'B' SECTION)
HARI PRASATH T (IV YEAR ECE 'A' SECTION)
SHREYA ROSHINI (III YEAR ECE 'C' SECTION)
HEMANTH BABU (III YEAR ECE 'B' SECTION)
HARINI S (III YEAR ECE 'A' SECTION)
S. ARAVIND – II YEAR ECE 'A' SECTION
LAKSHMAN RAM – II YEAR ECE 'A' SECTION
G. KEERTHANA – II YEAR ECE 'A' SECTION
A. PRAVEEN – II YEAR ECE 'B' SECTIONS.
PRIYADHARSHINI – II YEAR ECE 'B' SECTION
T. RAKSHITHA – II YEAR ECE 'B' SECTION

Mr.A.BALA KUMAR(AP/ECE)

Mr.A.VINNEY CLARET

EDITOR

STUDENT COORDINATORS

