

**G. Narayanamma Institute of Technology and Science (For Women)  
(AUTONOMOUS)**

**Department of ECE**

**JNTUH Research Center (JC Bose RC)**

Welcome to JNTUH Research Center (JC Bose RC). This Research center is a dynamic hub fostering in projects development and knowledge creation. Comprising multidisciplinary experts, it conducts cutting-edge research, drives technological advancements, and addresses critical challenges. With state-of-the-art facilities, it serves as a catalyst for collaboration, pushing the boundaries of scientific discovery and contributing to societal progress. This centre basically consists of all VLSI software and Arduinos, ESP 32, Raspberry Pi and various sensors.



**Profile:** Dr Renuka Devi S M, RC Incharge

**Name of Coordinator:** Dr Renuka Devi S M

**Designation:** Professor

**Specialisation:** Image Processing, Digital Communications

**Email:** renuka.devi.sm@gnits.ac.in

**Objectives:**

- Provide UG and PG students with research facilities, enhancing their practical skills and critical thinking abilities.
- Foster a supportive environment by offering mentorship from experienced faculty in guiding projects and helping them navigate the research process.
- Facilitate the transfer of theoretical knowledge to practical application, allowing students to apply classroom learning in a real-world research setting, promoting a deeper understanding of their field of study.

**Faculty Members**

S.No.	Name	Designation	Qualification	Specialization
1.	Dr M. Vijaya Lakshmi	Assoc. Professor	Ph.D	Wireless Networks
2.	Ms. B. Tulasi Sowjanya	Assistant Professor	M.Tech	Systems and signal Processing
3	Ms P SriPadma	Assistant Professor	M.Tech	Digital Systems
4	Ms Ch Anusha	Assistant Professor	M.Tech	Wireless Communications
5	Mr G Krishna Kishore	Assistant Professor	M.Tech	VLSI System Design

## Infrastructure

S.No.	Name of the Equipment	Quantity	Cost(in Rs)
1.	Arduino Board, Node MCU, PIR, Ultrasonic, DHT Sensors, Core i3 – HP SYSTEMS, Intel Real Sense Depth Cameras D435i & D435, NVIDIA Jetson Nano board, Raspberry Pi's and various sensors	-	1,20,000.00
2	Xilinx ISE 13.4 Version Edition Software (25 User Floating License), VLSI Universal Trainer kits 7 No's	7	1,93,750.00
3	Mentor Graphics Back End Tools-HEP-1 Mentor Graphics Front End Tools-HEP-2-( 50 User Floating License)	50 users	5,48,700.00
	Total Rs.		8,62,450.00

## Outcomes

- UG & PG students will develop practical research skills, including experimental design, data collection, analysis, and interpretation, preparing them for future academic and professional endeavours.
- Students will have the chance to contribute to research publications or present their findings at conferences, showcasing their work and gaining valuable experience in academic dissemination.
- Participation in a research lab will foster critical thinking and problem-solving abilities, enabling students to approach complex issues with analytical perspectives and creativity, valuable skills applicable in various academic and professional contexts.

## Photo Gallery



Fig: JNTUH Research Center (JC Bose RC) Lab



Fig. Brane Technologies experts interacting with ECE students



Fig. Project expo of ECE department



Fig. Dr Samrat L Sabat , director R& D , UoH interacting with project students

**Workshops and Training programs conducted in the Centre:**

**Academic Year:**

SI No.	Name of the Workshop/ Seminar	No. Participants	Date	Link to the Workshop/Seminar report on the website
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1	Developing Applications based on Arduino and Cloud Operations	45	8 <sup>th</sup> March to 10 <sup>th</sup> March 2021	<a href="https://www.gnits.ac.in/workshops-organized/">https://www.gnits.ac.in/workshops-organized/</a>
2	Challenges in Computer vision using DL & IoT Protocols	68	20 <sup>th</sup> to 24 July, 2020	<a href="https://www.gnits.ac.in/workshops-organized/">https://www.gnits.ac.in/workshops-organized/</a>
3	Robotics Powered by ROS	53	25 <sup>th</sup> to 30 <sup>th</sup> May, 2020	<a href="https://www.gnits.ac.in/workshops-organized/">https://www.gnits.ac.in/workshops-organized/</a>

### List of Proposals Granted/Submitted

#### List of projects Granted for various schemes during A.Y: 2023-24

S.No	Name of the Funding Agency	Name of the Principal / Co-Principal Investigator	Title of the Project	Month and Year	Cost of Project (in Rs.)	Duration	Temporary Registration Number (TPN)	Remarks
1.	SEED	Mrs. P. Sri Padma Mrs. B. Tulasi Sowjanya	Smart Kitchen Management System	2023	0.36L	-	-	-

#### List of projects Granted for various schemes during A.Y: 2020-21

S.No	Name of the Funding Agency	Name of the Principal / Co-Principal Investigator	Title of the Project	Month and Year	Cost of Projects (in Rupees)	Duration	Sanctioned Id	Remarks
1	SEED	Dr.B.Venkateshulu & Dr. Renuka Devi S M	Third EYE, Automatic hand Sanitizer, Lora Smart city	2020-21	0.72 L	1 year	GNIT S/SE EDG RAN TS/20 20/05	Completed

#### List of projects Granted for various schemes during A.Y: 2019-20

S.No	Name of the Funding Agency	Name of the Principal / Co-Principal Investigator	Title of the Project	Month and Year	Cost of Project (in Rs.)	Duration	Sanctioned Id	Remarks
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1.	JNTUH-TEQIP-III/MHRD	Dr. Renuka Devi SM	Automatic Pothole Detection and Listing the GPS Location	2019	2.5L	2 Years	-	Completed
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**List of projects applied for various schemes during A.Y: 2022-23**

S.No	Name of the Funding Agency	Name of the Principal / Co-Principal Investigator	Title of the Project	Month and Year	Cost of Project (in Rs)	Duration	(TPN)	Remarks
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1	DBT	Dr. Renuka S M & Dr. C Padmaja	Agro advisory System on Rice yield estimation using IoT	21-1-23	21.45L	2years	-	-
2.	DBT	Mr. Rakesh Kumar Y & Dr. Renuka S M	Mushroom diseases detection using deep learning to prevent mushroom production loss	21/01/2023	29.86L	2years	-	-

**List of projects applied for various schemes during A.Y: 2021-2022**

S.No	Name of the Funding Agency	Name of the Principal / Co-Principal Investigator	Title of the Project	Month and Year	Duration	Temporary Registration Number (TPN)	Remarks
1	ISRO	Dr. Renuka Devi S M	Urban Object Detection using UAV Remote Sensing	2021 - 2022	2years	RES-NRSC-2022-013	-

**List of projects applied for various schemes during A.Y: 2019-20**

S.No	Name of the Funding Agency	Name of the PI / Co-PI	Title of the Project	Month and Year	Cost of Project (in Rs.)	Duration	Remarks
1	TSCOST	PI: Dr. Renuka Devi SM	System for Agro advisory on Rice yield estimation using IoT.	2019-20	5 L	2years	Applied

**List of Projects Carried out Under RC/CoE**

**List of projects During the A.Y: 2023-24**

S.NO	Name of the Student	Name of the Faculty	Project Title
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1	D. Sathvika, G. Shalini, L. Hrushitha, A. Srinidhi	P. Sri Padma	FINGERPRINT VEHICLE STARTER USING ARDUINO
2	Mugala Naveena, Gouda Neeraja, G.Niharika, Kuteddula Lahari	B.Tulasi Sowjanya	SMART HELMET FOR TRACKING COAL MINERS
3	Sneha Medhavath, Madhurya Modium, Pallavi Pasula, Deeksha Begari,	Chilupuri Anusha	FACE RECOGNITION BASED ATTENDANCE SYSTEM USING ESP 32CAM

4	Gangadevi Bhanu Sri, Arushi Sreekumar, Ankam Lakshmi Nikitha,Baddam Shivani	Dr Renuka Devi S M	Physical Video game
5	Arushi Sreekumar,Mankala Srivani, Jarpula Swetha, Baddam Shivani	Dr Renuka Devi S M	3D Scanner Using depth Camera
6	Koram Priyanka, Kumbhm Gangothri,Kancha Nandhini	M.Shanthi	IOT Based Smart Notice Board
7	Vidavaluru Harshitha, Potha Sai Nikitha, Puneria Manisha	N.Krishna Jyothi	Fake Currency Detection System

#### List of projects During the A.Y: 2022-23

S.NO	Name of the Student	Name of the Faculty	Project Title
1	Sukka Keerthana, Basu Akhila,Kanumuru Meghana	Dr Renuka Devi S M	Medicine Remainder using Arduino Based on IoT
2	Muvva Hasmitha, Marpadaga Bhavana, J Sri vaishnavi	P Satyanarayana Gowd	FingerPrint Based voting system Using Arduino Uno
3	Atagara Manasa	Dr Renuka Devi S M	Traffic Rule Violation Detection System
4	Atagara Manasa	Dr Renuka Devi S M	Yolvo2 object detection on unnamed aerial vehicle surveillance

#### List of projects During the A.Y: 2021-22

S.NO	Name of the Student	Name of the Faculty	Project Title
1	Y Sneha Prabha, A Asha, P.Snigdha	V.Shankar	Design of Smart Mirror System using IoT
2	Kusampudi Sricharita, Chervirala Dharani, Vavilala Akshitha	C.Padmaja	Arduino Based Covid Disinfection Box

3	C.Sucharitha	Dr Renuka Devi S M	Human Face Recognition using Thermal Images
4	T sadhana, B.Bhavana,N Pavani, GSL Manaswini	C.Padmaja	Smart Road Crossing Indicator using Arduino
5	Shiliveru Sushma, Madasu Akanksha, Rekha Ray, Koumudi Kurmilla, T Guru Yashasree	T Srilatha	RFID Based Automated Petrol Pump System
6	Peravali	Dr Renuka Devi S M	Piono Note Recognition

### List of projects During the A.Y: 2020-21

S.NO	Name of the Student	Name of the Faculty	Project Title
1	Sai Aparna Bhimaraju, Kamidi Sai Meghana, Jami Madhupriya, Nallapuneni Ikya	Dr Renuka Devi S M	Automated vehicle System with Social Distance Allerting Pollution Status Reporting and Advanced Seating Capacity
2	Duvvuru Jasmitha, Soma Hemalatha, Mamidala Aarthi, Garikimukkala Sankeerthana	N.Harini	IoT Based Home Security System
3	S Jhansi Lakshmi, Velagala Spandana, Poojasree Keerthipati, V Varsha	N.Harini	High Security Locking System using Arduino
4	Soma Hemalatha, Mamidala Arthi, Mallika Reddy M, G Sankeerthana	P.Lavanya	IoT Based Pollution and Weather Monitoring System
5	R Prathyusha, M Beulah,Naga Sai Lohitha Karumuru, Kashmalla Kalyani	V.Shankar	Arduino Based Saline Level Monitoring and Alert System
6	G Kalpana, L K Aditi, Sri Swathi Laxmi,B Divya	V Radha Krishna	Home Safty and Security System

### Outcomes:

- 1. Knowledge Advancement:** Research centres drive academic innovation, fostering faculty-student research and generating publications. This contributes significantly to the advancement of knowledge by students and faculty.
- 2. Enriched Student Learning:** These centres provide students and faculty hands-on research opportunities, improving their problem-solving skills and preparing them for real-world challenges.

## List of publications

	<b>Title of paper</b>	<b>Name of the author/s</b>	<b>Name of journal</b>	<b>Year of publication</b>	<b>ISSN number</b>
1	Fingerprint Vehicle Starter Using Arduino	D. Sathvika P. Sri Padma, G. Shalini, L. Hrushitha, A. Srinidhi	International Journal for Research Trends and Innovation	2023	2456-3315

2	Smart Helmet for Tracking Coal Miners	Mugala Naveena, Gouda Neeraja, G.Niharika, Kuteddula Lahari, B.Tulasi Sowjanya	International Journal of Advances in Engineering and Management	2023	2395-5252
3	Face Recognition Based Attendance System Using Esp 32cam	Sneha Medhavath, Madhurya Modium, Pallavi Pasula, Deeksha Begari, Anusha Chilupuri	International Journal of Engineering Applied Sciences and Technology	2022	2455-2143
4	Predicting Online Customer Purchase using Gradient Boost Classifier	Arushi Sreekumar, Renuka Devi S M	International Journal for Research in Applied Science & Engineering Technology	2023	2321-9653;
5	An Enhanced Real-Time System for Wrong-Way and Over Speed Violation Detection Using Deep Learning	Manasa A.;Renuka Devi S.M.	Fourth International Conference on Image Processing and Capsule Networks	2023	978-981-99-7092-6
6	Fault Identification in Solar PV Panels Using Thermal Image Processing Technique	Dr. Renuka Devi S M S.Keerthana B.Akhila G. Meghana K. Meghana	International Journal of Innovative Science and Research Technology	2022,	2456-2165
7	'Pothole Detection Using YOLOv2 Object Detection Network and Convolutional Neural Network	Sumalatha, R. Rao, R. Varaprasada Devi, S. M. Renuka '	Advances in Intelligent Systems and Computing	2021,	978-981-16-2007-2
8	Pothole Detection using CNN and AlexNet	Gorityala Srinidhi, Renuka Devi SM	2nd International Conference on Communication & Information Processing (ICCIP)	2020	-



9	Detection of similar objects and localizing on each using Depth	Renuka Devi S.M.;Akula A.	2nd International Conference on Inventive Research in Computing	2020	978-1-7281-5374-2
10	Automatic speed-limit sign detection and recognition for advanced driver assistance systems	Akula A.;Renuka Devi S.M.	International Journal of Innovative Technology and Exploring Engineering	2019	2278-3075

### List of Patents

Sl. No.	Patent Application No.	Status of Patent (Published / Granted)	Inventor/s Name	Title of the Patent	Applicant/s Name	Patent Published Date / Granted Date (DD/MM/YYYY)
1.	2019410 4764 4 A	Granted 477814	Dr.B.Venkate shulu B.Rakesh Goud Dr. Renuka Devi S M	Device And Method For Determining Quality And Flow Control Of Water	Dr.B.Venkate shulu B.Rakesh Goud Dr. Renuka Devi SM	06/12/2023
2.	2022410 31186A	Published	Dr. M. Vijaya Lakshmi	IoT with Artificial Intelligence Based Data Authentication from End-to-End Cyber Security Configuration	Dr. M. Vijaya Lakshmi	03/06/2022
3.	U359729 -001	Published	Dr. M. Vijaya Lakshmi	An AI Powered Pothole Repairing System	Dr. M. Vijaya Lakshmi	02/03/2022
4.	358464- 001	Published	Dr. M. Vijaya Lakshmi	An Industrial Ground Inspection Robot for Hazardous Environment	Dr. M. Vijaya Lakshmi	13/03/2022
5.	2021410 10185 A	Published	Dr. Renuka Devi S M	The THIRD EYE	Dr. Renuka Devi S M	26/03/2021

### Awards/prizes Won

Name of the Student	Name of the Award/ recognition	Name of the Awarding Body/Agency (Government/Government-recognised agencies/bodies)	Month and Year of award
Pallavi	Special prize(electronics)	Axiscades and Mistral	June 2023
Vaishnavi R N. Tejaswini Meghana	Secured I Prize with a cash Prize of Rs.10,000/- in Start Up Pitch (Ideathon)	VNRVJIT Convergence Fest	September 2019