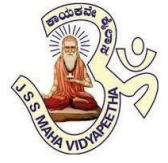





**JSS Mahavidyapeetha**  
**JSS Academy of Technical Education, Noida**  
Department of Electronics & Communication & Engineering.



**PROFILE**

**1. Personal Details**

NAME	Dr Gayatri Sakya	
<b>DOB</b>	03-07-1977	
DEPARTMENT	ECE	
DESIGNATION	Associate Professor	
PHONE	9990274390	
EMAIL ID	gayatri.sakya@rediffmail.com	
Date of Joining (JSSATEN)	01-02-2006	
<b>Address of Correspondence</b>	2/15, BANYAN ROAD, SHIPRA SUNCITY, INDRAPURAM, GHAZIABAD, UP-201014	DOB 03-07-1977 (Senior Member IEEE)

**2. Experience**

Total Experience in Years	Teaching: 17.5	Industry: 2.5	Research: 11
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**3. Qualifications**

COURSES	SPECIALIZATION	Year of Award	INSTITUTION	UNIVERSITY	Division
B.E.	Electronics Engineering	1999	MNNIT Allahabad	Allahabad University	Ist(67.4%)
M.E..	Embedded Systems	2004	SGSITS Indore	RGPV Bhopal	Ist(83.96%)
Ph.D.	ECE(Wireless Sensor Networks)	2018	-	Gautam Buddha University	NA
Post Doc.	-	-	-	-	

**4. Research & Publications**

Papers Published in SCI	<b>01 (Impact Factor-4.028)</b>	
Papers Published in Web of Science /Scopus indexed Journals	International:08	National:-nil

Papers Published in other Journals	International:06	National:-nil
Papers Presented in Conferences / Symposium	International:16	National:-01
Book chapters Published(SCI/Scopus Indexed)	1. Name of the book chapter : Performance Analysis of SMAC Protocol in Wireless Sensor Networks Using Network Simulator (Ns-2) Publisher: <b>Springer, Berlin, Heidelberg, vol. 115, pp. 42-51, 2013. (SCI/Scopus Indexed)</b> Year of Publication:2013	
	2. Name of the book chapter: Medium access control in wireless sensor networks Publisher: CRC Press (Taylor & Francis), Florida, USA. ISBN: 978-1498783347, 2016. <b>(Scopus Indexed)</b> Year of Publication:2016	
	3. Name of the book chapter: Medium Access Control Protocols for Mission Critical Wireless Sensor Networks Publisher: <b>(Published on 9th February 2020 by Advances in Intelligent Systems and Computing (AISC), Springer.) (Scopus Indexed)</b> Year of Publication: 2020.	
	4. Name of the book chapter: Intelligent Invigilation using video surveillance Publisher: <b>Advances in Intelligent Systems and Computing, 2021 (AISC), Springer.) (Scopus Indexed)</b> Year of publication: 2021	
	5. Name of Book Chapter : A Novel Design of a Drain Cleaning Robotic Vehicle <b>(Accepted)</b> Publisher: CRC Press , Taylor and Frances (2023)	
	6. Name of Book Chapter: An Intelligent Model for Early Fire Detection using IoT/Lora in Smart City <b>(Accepted)</b> Publisher: Springer CCIS series, ISBN: 1865:0929 (2023)	

## 5. Research Guidance

PhD Guide? Give field & University	Yes(Co-Guide), Field :Wireless Sensor Networks	Name of University: Jaypee University Noida
PhDs / Projects Guided	Ph.D. Awarded: - <b>Guiding: 01</b>	Projects at Master's Level: 10 Projects at Bachelor's Level: 45

## 6. Grants

### i. Funds Received (Projects)

S.NO	Project Name	Grant Amount	Date of receiving the Grant	Duration	Grant issuing authority/ Body / Organization
1	A Mission Critical Protocol for Pipeline Leakage Detection	3.0 lakhs	25 <sup>th</sup> June 2019	1 year	Collaborative Research Innovation

	Using Wireless Sensor Networks				Program(TEQIP-III) under AKTU, UP
2	Sanjay: The Third Eye	12,000/-	March 2018	1 year	KCIIS, AKTU,UP
3	Eye-Vista- Smart Assistance for Visually impaired	20,000/-	January 2020	1 year	CST UP
4	<b>IEEE ROBOTICS AND AUTOMATION SOCIETY</b> <b>Advisor: Dr. Gayatri Sakya</b> (IEEE ROBOTICS AND AUTOMATION SOCIETY Chapter start-up grant to conduct activities)	\$500	25-01-2021	-	IEEE
5	<b>IEEE- RAS Chapter Initiative Grant, The IEEE Robotics and Automation Society</b> (For setting up of Embedded Systems and Robotics Lab)	\$1000	19-11-2021	-	IEEE
6	The AICTE Training and Learning (ATAL) Academy FDP on –Integration of WSN and IoT for Agriculture	3.0 Lacs	25-07-2022	15 days	AICTE Sponsored

**ii. Patents**

Sl. No.	Title Details	Details of award of patent / Filed and published
1.	IoT based smart healthcare solution for predicting severity prognosis in heart patients using machine learning	<b>Application no:</b> 202111022490, date of filing: 20-05-21(published)
2.	IoT based smart healthcare solution for the Prognosis of skin cancer using machine learning	<b>Application no:</b> 202111040153 A, date of filing: 4/9/2021, date of published: 10/9/2021
3.	WSN AND INTERNET-OF-THINGS (IOT) ENABLED PIPELINE · LEAKAGE DETECTION SYSTEM AND METHOD"(Applicant: JSSATE, NOIDA)	<b>Application no: 202011035583</b> <b>Date of filing: 18/08/2020,</b> <b>Date of publication: 25/02/2022</b>
4.	A system for Field monitoring and data collection implementation as a precision agriculture tool and method thereof ( Applicant: JSSATE, Noida)	<b>Application no: 202211067179</b> <b>Date of filing: 22/11/2022,</b> <b>Date of publication: 02/12/2022</b>
5.	Fire prevention and firefighting system for smart city	<b>Application no: 202211071353</b> <b>Date of filing: 10/12/2022,</b> <b>Date of publication: 30/12/2022</b>

✓ **AWARDS:**

- **“YOUNG SCIENTIST” AWARD IN AUTOCOM INTERNATIONAL CONFERENCE 2022**
- **“BEST PAPER AWARD”**  
Best paper Award in 6<sup>th</sup> International Conference on —Emerging Technologies in Computer Engineering: Industrial IoT and Cyber Physical Systems. For presenting paper —An intelligent Model for Early Fire Detection using IoT/Lora in Smart City held at SKIT Jaipur during February 3<sup>rd</sup>-4<sup>th</sup>, 2023.
- **BEST FACULTY AWARD 2019-20**
- **BEST FACULTY AWARD 2018-19**

**7. Publications**

**i. International Journals**

Sl. No.	Title of the paper	Name(s) of Author(s)	Name of the Journal	Volume No. Issue No. Year	WOS / Scopus / Both	Impact Factor	Publisher
1.	MAC Protocol with Regression based Dynamic Duty Cycle Feature for Mission Critical Applications in WSN	Gayatri Sakya and Vidushi Sharma	International Journal of Advanced Computer Science and Applications (IJACSA)	Vol. 8, Issue 6, pp. 198-206, 2017	WOS	1.2	The Science and Information Organization
2.	ADMC-MAC: Energy efficient adaptive MAC protocol for mission critical applications in WSN	Gayatri Sakya and Vidushi Sharma	Sustainable Computing : Informatics and Systems	Vol. 23, pp. 21-28, 2019	SCIE	4.028	Elsevier
3.	Performance evaluation of ADMC-MAC mission critical protocol for wireless sensor networks	Gayatri Sakya, Vidushi Sharma	Journal of Discrete Mathematical Sciences and Cryptography	Vol. 22, Issue 8, pp. 1407-1422, 2020	WOS/SC OPUS	2.05	Taylor & Francis

<b>4.</b>	WSN and IoT based smart city model using the MQTT protocol	Vishal Kumar, Gayatri Sakya & Chandra Shankar	Journal of Discrete Mathematical Sciences and Cryptograp	Vol.22, Issue 8, pp. 1423-1434	<b>WOS/SC OPUS</b>	<b>2.05</b>	<b>Taylor &amp; Francis</b>
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5.	Machine learning based MAC Protocol Design for Pipeline Leakage Detection in Smart City Project	Gayatri Sakya, Chhaya Dalela , Laxman Singh, Anmol, Anuj Jain	Journal of Discrete Mathematical Sciences and Cryptography	Vol. 4, Issue. 5, pp. 1283-1292	WOS/SC OPUS	2.05	Taylor & Francis
6	Internet of Things Care Device for Visually Impaired and Old People	Anmol, Gayatri Sakya, Suyash Verma	Journal of Information Technology Management, 2022, Special Issue	2022 special issue, pp. 132-146	Scopus	.32	University of Tehran
7	Simulation of IoT based Landfill Fire Prediction System using NS-3.36 LoRaWAN	Dr Gayatri Sakya, Dr. Rajeev Kumar Shakya, Vrattica Yadav, Saumya Shukla, Aditi Gupta	Journal of Discrete Mathematical Sciences and Cryptography	2023 (Accepted)	Scopus and Wos	2.05	Taylor and Francis
8	DC-LEACH: A unique Cluster Head Selection Algorithm with Improved QoS in Real time Applications for WSN	Monika. Malik , Gayatri Sakya , Alok Jhoshi	Journal of Discrete Mathematical Sciences and Cryptography	2023 (Accepted)	Scopus and Wos	2.05	Taylor and Francis

## Conferences

1. Gayatri Sakya et. al. -WSN based Intelligent Coal Mine Monitoring using Machine Learning, ICSC2022 IEEE International Conference at IIIT Noida

2. Manika Malik, Gayatri Sakya and Alok Joshi, -Various Optimization Algorithms for Enhancing Network Lifetime in LEACH Protocol in WSN, • ICSC2022 IEEE International Conference at JIIT Noida
3. Paper Titled " Performance Evaluation of ADMC-MAC Mission Critical Protocol for Wireless Sensor Networks" Presented in International Conference on Network And Cryptography(Netcrypt -2020), at JNU New Delhi
4. Paper Titled " WSN and IoT based Smart City Model using MQTT Protocol" Presented in International Conference on Network And Cryptography(Netcrypt -2020), at JNU New Delhi
5. Paper Titled "Machine learning based MAC protocol design for pipeline leakage detection in smart city project " Presented in International Conference on Network And Cryptography(Netcrypt -2021), at JNU New Delhi
6. Paper Titled " Internet of Things Care Device for Visually Impaired and Old People" Presented in International Conference on Network And Cryptography(Netcrypt -2021), at JNU New Delhi
7. C. Shankar, S. V. Singh, Gayatri Sakya 2019" DVCCTA based High Input Impedance VIVO Biquad Filter", International Conference on Computing, Power and Communication Technologies (GUCON) 350-354, 2020 Scopus IEEE
8. Malik, Monika and Sakya, Gayatri and Joshi, Alok, "Enhancement of Network Life Time in the LEACH Protocol for Real Time Applications", at JIIT NOIDA, 2021, ISBN 9781450389204, publisher Association for Computing Machinery, New York, NY, USA, <https://doi.org/10.1145/3474124.3474188>, BP15
9. Monika Malik , Alok Joshi, Gayatri Sakya , -DC-LEACH: A unique Cluster Head Selection Algorithm with Improved QoS in Real time Applications “ Autocom 2022 International Conference.
10. Gayatri Sakya et al “ A NOVEL DESIGN OF A DRAIN CLEANING ROBOTIC VEHICLE ” , Autocom 2022.
11. Gayatri Sakya et. al, “ SIMULATION OF IOT BASED LANDFILL FIRE PREDICTION SYSTEM USING NS-3.36 LORAWAN ” in Autocom 2022.
12. Gayatri Sakya et al, -An Intelligent Model for Early Fire Detection using IoT/Lora in Smart City || 6 th International Conference On —Emerging Technologies in Computer Engineering: Industrial IoT and Cyber Physical Systems || ICETCE-2023 03rd -04th Feb. 2023. Publisher: Springer CCIS series, ISBN: 1865:0929 (2023)
13. Sakya, Gayatri, and Vidushi Sharma. "Performance analysis of SMAC protocol in wireless sensor networks using network simulator (Ns-2)." In International Conference on Heterogeneous Networking for Quality, Reliability, Security and Robustness, pp. 42-51. Springer, Berlin, Heidelberg, 2013.
14. G. Sakya, V. Sharma and P. C. Jain, "Analysis of SMAC Protocol for Mission Critical Applications in Wireless Sensor Networks", 2013 3rd IEEE International Advance Computing Conference (IACC), pp. 488-492, 2013 (Scopus Indexed)
15. Presented a paper -Smart Agriculture System using Adhoc Networking among Firebird V Bots. || In 6th International Conference on Innovative Research in Engineering Science and Management (ICIRESM-16) at The Institutions of Electronic and Telecommunication Engineers (IETE), Lodhi Road, New Delhi, Delhi, on 9th October 2016 (ISBN: 978-81-932712-8-5.)
16. G. Sakya, V. Sharma and T. Sawhney , -An Improved MAC Model for Critical Applications in Wireless Sensor Networks ||, International Conference on "Latest Concepts in Science, Technology and Management (ICLCSTM-16), IETE, New Delhi, India , pp. 104-108, 2016.

## ii. Workshops /Conferences Attended

Sl. No.	Name of the workshop / Conference	Organizer	Date
1	Faculty Development Program On Internet of Things (IOT) Using Amazon AWS	Organized by Finland Labs (A Unit of Revert Technology Pvt. Ltd. in Association with	13th- 17th July 2020

		National Social Summit, IIT Roorkee	
<b>2</b>	Two Weeks Lecture Series on Research Trends in ICT	University School of Information and Communication Technology, Gautam Buddha University, Greater Noida - 201312, Uttar Pradesh, INDIA.	June 29, 2020 to July 9, 2020
<b>3</b>	One week workshop on Internet of Things	INTERNATIONAL CENTRE FOR ADVANCED RESEARCH AND STUDIES (ICARS), DELHI	June 22, 2020- June 26,2020
<b>4</b>	Two weeks faculty development program on Python	Organized by Department of Electronics & Communication Engineering, JSS Academy of Technical Education, Noida and spoken tutorial project, IIT Bombay funded by National Mission on Education through ICT, MHRD ,Govt of India.	22 <sup>nd</sup> June to 4 <sup>th</sup> July 2020
<b>5</b>	Introduction to Machine Learning (12 Weeks	platform (swayam.gov.in),NPTEL	Jan-Apr 2020 semester
<b>6</b>	Cloud ComputingI (8 weeks) NPTEL course	on the SWAYAM platform (swayam.gov.in)	Jan-Apr 2020 semester
<b>7</b>	One week workshop on Simulation and Data Analysis organized by the Gautam Buddha University, Greater Noida	Gautam Buddha University, Greater Noida	9th July 2012 to 14th July 2012.
<b>8</b>	Attended National Seminar on Recent Technological Developments in the field of Electrical Engineering (RTDEE-2013 conducted at JSSATE, Noida)	JSSATE, Noida	23rd August 2013 to 24th August 2013.
<b>9</b>	Attended Two days Embedded Systems and Robotics on E-Yantra IIT Bombay sponsored by MHRD through the National Mission on Education through ICT (NMEICT) conducted by at MGM College, Noida	Conducted at MGM College, Noida	4th August 2014 to 5th August 14



<b>10</b>	Completed STTP-RTICT'17 one week short term training program on Research Techniques in Information and Communication Technology conducted by GBU, Greater Noida	GBU, Greater Noida	30th January to 4th February, 2017.
<b>11</b>	<i>Completed 15 days FDP on Entrepreneurship conducted by National Science &amp; Technology Entrepreneurship Development Board (NSTEDBI), Department of Science and Technology, Govt. of India, New Delhi</i>	<i>National Science &amp; Technology Entrepreneurship Development Board (NSTEDBI), Department of Science and Technology, Govt. of India, New Delhi</i>	<i>12th -25th February 2018.</i>
<b>12</b>	Attended One week FDP on —Next Generation Nano Satellite Communication Systems	AKTU, LUCKNOW.	07th May - 11th May, 2018
<b>13</b>	Participated in Texas Innovation Design contest by TI &DST	TI &DST	2018

### iii. Workshops / Conference (Organized)

<b>Sl. No.</b>	<b>Name of the workshop / Conference</b>	<b>Organized by</b>	<b>Date</b>	<b>Role</b>
1.	ATAL FDP on — Integration of WSN and IoT for agriculture	Dr Chhaya Dalela and Dr Gayatri Sakya, ECE Department	02-01-2023 to 13-01-2023	Co-Coordinator
2.	One day Hands-on Session on IOT application using LoRaWAN	Mr. Harsh Sharma– Engineer Touch TECHNO ,New Delhi	7 October, 2022	Co-Convener
3.	One Day online HANDS-ON session on —Simulation in NS2 and NS3	Dr Rajeev K Shakya(NS3 expert), Dr Gayatri Sakya(NS2 Expert)	17-09-2022	Co-Convener and Speaker
4.	Two Days Hands-on workshop in e- Yantra Embedded Systems and Robotics Lab	Dr Gayatri Sakya, Monika Malik , Manan Chandra (student)	24-11-2022 & 25-11-2022	Convener and Trainer
5.	MODERATOR in Workshop on Internet of Things	INTERNATIONAL CENTRE FOR ADVANCED RESEARCH AND STUDIES (ICARS), DELHI	June 22, 2020- June26,2020	Moderator
6.	<i>6th International Conference on Advances in Computing, Communication and Informatics ICACCI'2017</i>	<i>6th International Conference on Advances in Computing, Communication and Informatics ICACCI'2017 held at Manipal University,</i>	<i>13th September to 16th September 2017.</i>	<i>TPC Members/Reviewer</i>

		Karnataka, India		
7.	Conducted Two days workshop on Wireless Sensor Network using NetSim in association with TetCos Bengluru at JSS Academy of Technical Education, Noida	in association with TetCos Bengluru at JSS Academy of Technical Education, Noida	from 28th October to 29th October 2015.	Coordinator
8.	GUCON 2019 International Conference.	Galgotia University	2019	TPC member and reviewer
5	Conference: Intelligent Control and Computation for Smart Energy and Mechatronic Systems (ICCSEMS-2020) .	JSS Academy of Technical Education, Noida.	24 th -26 th Sep 2020	Publication Committee

**iv. Conference Attended (those sponsored by AICTE / ISTE/IETE/TEQIP or any other sponsoring body)**

Sl. No.	Name of the workshop / Conference	Organizer	Date
1	AICTE approved two Weeks Workshop on Recent Trend in Wireless Communication organized by Galgotia University, Greater Noida	Galgotia University, Greater Noida	2nd July 2012 to 15th July 2012.
2	Attended AICTE approved one week workshop on Wireless LAN's in National Institute of Technical Teacher's Training & Research (NITTTR), Chandigarh	National Institute of Technical Teacher's Training & Research (NITTTR), Chandigarh	30th July 2012 to 4th August 2012.
3	Attended MHRD sponsored two week workshop on Signals and Systems conducted by IIT Kharagpur & IIT Mumbai	by IIT Kharagpur & IIT Mumbai	2nd Dec 2014 to 12th Dec 2014.
4	Participated in INSPIRE Internship Science Camp – 2016 organized by Department of Science and Technology (DST), Ministry of Science and Technology, Government of India at JSS Academy of Technical Education Noida	Department of Science and Technology (DST), Ministry of Science and Technology, Government of India at JSS Academy of Technical Education	26th December 2016 to 30th December.

		Noida	
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### 9. Details of NPTEL / COURSEERA courses completed

Sl. No.	Name of the subject	Organized by	Date of completion / Award	Grade / Marks
1	<b>Introduction to Machine Learning (12 Weeks)</b>	NPTEL ,IIT Bombay	Jan-Apr 2020 semester	72%
2	<b>Cloud Computing” (8 weeks) NPTEL course</b>	NPTEL, IIT Kharagpur	Jan-Apr 2020 semester	62%
3	<b>Introduction to Internet of Things</b>	NPTEL IIT Madras	Jan-Apr 2022 semester	<b>71%(TOPPER)</b>

### 10. Membership of Professional Bodies:

<b>1. IEEE membership : 92170331</b>
<b>2. IAENG membership: 314178</b>
<b>3. Soft Computing Research Society: 2022-11-17-3672</b>

## CONTRIBUTION

### 11. Institutional Level:

- **Co-Coordinator of NAAC Criteria-2**
- **Co-Editor of Proceeding of International Conference ICCSEMS-2020**
- **Faculty In-charge: E-Yantra: Embedded Systems and Robotics Lab**

### 12. Departmental Level:

- ✓ **IEEE RAS Chapter advisor**
- ✓ Worked for NBA Criteria 6 and 7 and at present NBA Coordinator for Criteria 5.
- ✓ Module Coordinator
- ✓ Departmental project committee member
- ✓ Microprocessor lab coordinator
- ✓ Research Coordinator

### 13. Lecture delivered outside the institute:

- Lecture delivered on WSN protocols in two week online expert lecture series in Research Trends in ICT organized by GBU, Greater Noida (Date: 9<sup>th</sup> July 2020)
- Participated as SPEAKER for faculty development program on Internet of Things and USE Cases: Practical Perspective organized by HR Institute of Technology Ghaziabad from 15<sup>th</sup> to 19 July 2019.
- **SESSION CHAIR:**
  - ✓ Moderator ICARS 2021
  - ✓ JNU Netcrypt Conference -2019
  - ✓ JNU Netcrypt Conference -2020
  - ✓ JSS National Conference-2021
  - ✓ JUDGE in SIH 2020 in JSSATE Noida
  - ✓ Session Chair in 2022 8th INTERNATIONAL CONFERENCE ON SIGNAL PROCESSING AND COMMUNICATION (ICSC) at IIIT Noida 01 – 03 December, 2022

#### 14. Project Submitted

- A Proposal on **Next Generation Fire Detection Systems (SAC-007)** in ISRO Respond Basket Program -2021. **Also received the Endorsement letter from Principal, JSSATE Noida.** The project got one review from ISRO.
- RPS submitted in AICTE Scheme titled WSN and IoT based intelligent protocol for firefighting system in smart city project of 25.0 lacs in 2020.
- MODROB proposal –Improvisation of Microprocessor lab for IoT applications of 19 lacs in 2020.
- A Proposal on “**Crowd Sourcing for Landslide Monitoring using IoT**” in ISRO Respond Basket Program - 2022 of 35 lakhs.
- A proposal of ATAL FDP is submitted and **Sanctioned** on Agricultural applications of Wireless Sensor Networks and IoT in 2022 for 3 Lakhs.
- A proposal on “**WSN and IoT based Intelligent Fire Detection and Fire Fighting System for Smart City**” is submitted in C-DOT of 12 Lakhs under CCSP scheme for collaboration with C-DOT.

#### 15. Any other information you will like to share about your professional experience

1. Faculty-in-charge and coordinator of e-Yantra Embedded Systems and Robotics Lab.
2. In the year 2019, best feedback certificate is given by JSSATE, Noida
3. Financial Assistance of 2.25 lakhs from **JSSATE, Noida** is sectioned for SHOWCASE of project Title –Sanjay: The Third Eye, selected in the 2019 Defense TechConnect Innovation Summit & Expo, collocated with the Smart Cities Connect Fall Conference and SBIR/STTR Fall Innovation Conference, October 8—10, 2019, at the Gaylord National Convention Center, National Harbor, Maryland, U.S.A.

**Dr. Gayatri Sakya**

**Associate Professor, Department of Electronics & Communication  
Engineering, JSS Academy of Technical Education, Noida**