

Faculty Profile

Faculty Name	ARUN KUMAR RANA
Designation	Assistant Professor
Qualification	Ph.D*, M.Tech, B.Tech
Email	ranaarun1.ece@piet.co.in
Area of Interest	IoT, WSN, Image Processing
Work Experience (Total)	
<ul style="list-style-type: none"> • Teaching 	13.5 YEARS
<ul style="list-style-type: none"> • Research 	
<ul style="list-style-type: none"> • Industry 	
<ul style="list-style-type: none"> • Others 	
Courses taught at Diploma/ Post Diploma/ Under Graduate/ Post Graduate/ Post Graduate Diploma Level	Diploma-IoT Under Graduate-MPI, MM, ESD, CCN etc. Post Graduate-WSN
Membership of Professional Bodies	<ul style="list-style-type: none"> • Become member of International Association of Engineers (IAENG) Member (Member No: 276936). • Asia Society of Researcher ASR Senior Member Number:R219013006.. • Member of Editorial Board of The International Innovative Research Journal of Engineering and Technology (IIRJET)
Research Publications	
<ul style="list-style-type: none"> • Research Papers UGC-CARE 	2
<ul style="list-style-type: none"> • Research Papers SCOPUS 	9
<ul style="list-style-type: none"> • Research Papers WoS/SCI/ABDC 	3
<ul style="list-style-type: none"> • List of Publications 	<ul style="list-style-type: none"> • Rana, A., Arora, O., Syal, N., & Singh, P. (2010, October). Holographic Versatile Disc: High-speed information storage systems. In International Congress on Ultra Modern Telecommunications and Control Systems, Moscow Rusia (pp. 934-939). IEEE, SCOPUS. • Kumar, A., Garg, D., Chopra, A., & Lecturer, S. Quality Of Service (Qos) Based Scheduling Environment Model In Wimax Network With Opnet Modeler. Chief Patron

Chief Patron.

- Kumar, A., & Garg, A. K. (2011). Queuing Algorithm Based Quality of Service (QoS) For Scheduling Environment Model in WiMAX Network with Opnet Modeler. Global Journal of Researches in Engineering Electronic and Electronics Engineering, 11(8), 35-40. [Google Scholar citation: 10, SEMANTIC citation =24]
- Stuti, G., Arun, R., & Manpreet, K. (2013). A review of comparison techniques of image steganography. IOSR Journal of Electrical and Electronics Engineering, 6(1), 41-48.
- Goel, S., Rana, A., & Kaur, M. (2013). Comparison of image steganography techniques. International Journal of Computers and Distributed Systems, 3(1), 20-30. [Google Scholar citation: 28, SEMANTIC citation =24]
- Goel, S., Rana, A., & Kaur, M. (2013). A review of comparison techniques of image steganography. Global Journal of Computer Science and Technology. [Google Scholar citation: 51, SEMANTIC citation =12]
- Analysis and classification of different De-noising algorithm to compute an optimum technique, IJCA, vol 3 pp.269-281, June 2014.
- Gupta, A. K., & Rana, A. An Approach for Base Station Control and Power Competent by WSN” IJRIT, ISSN: 2001-5569, Volume 2 Issue 6, June 2014
- An Analysis for Base Station Control and Power Competent by Wireless Sensor Network, IJCA, impact FACTOR*: 2.52 (2013), issue 4, Volume 2, March–April 2014.
- Kakkar, P., & Rana, A. (2013). SER Performance of M-ary QAM OFDM System under AWGN Channel. International Journal of Computer Applications, 73(9).
- Manisha, A. REVIEWING MATHEMATICAL MODELS FOR ADAPTIVE NOISE REDUCTION FILTERS. (Issn 2278–6643) Volume-4, Issue-1, April-2015.
- Goel, S., Rana, A., & Kaur, M. (2013). ADCT-based robust methodology for image steganography. International Journal of Image, Graphics and Signal Processing, 5(11), 23. [Google Scholar citation: 12]
- Kumar, K., Gupta, E. S., & Rana, E. A. K. Wireless Sensor Networks: A review on “Challenges and Opportunities for the Future world-LTE”. (Online)2018
- Soni, A., & Rana, A. (2017). Analyze the Portrayal of Stable Election Protocol for Wireless Sensor Network using Matlab [C]. International Journal of Computer Applications, 174(8), 18-22.
- Analyze Portrayal Of SEP For WSN Using Matlab, International Journal Of Advance Research, Ideas And

Innovations In Technology, Issn: 2454-132x Impact Factor: 4.295 (Volume3, Issue5).2018

- Kumar, A., Salau, A. O., Gupta, S., & Paliwal, K. (2019). Recent trends in IoT and its requisition with IoT built engineering: A review. In *Advances in Signal Processing and Communication* (pp. 15-25). Springer, Scopus, Singapore. [Google Scholar citation: 9]
- A Review on Web Application Security:_A research plan, IJCRT | Volume 6, Issue 1 March 2018 | ISSN: 2320-2882.
- Survey of Machine Learning Methods, What's More, Their Sensor and IoT Applications for Future World, AJCS journal. Volume2Issue2,ISSN:2456-6616,Dec-2018
- Investigation of Smart Home framework in view of Cloud Computing and the key advancements with IoT, Scenario of Environmental Research and Development ISBN: 978-93-5346-498-1, Page No. 187-191, 31 Dec 2018.
- Rana, A. K., & Sharma, S. Industry 4.0 Manufacturing Based on IoT, Cloud Computing, and Big Data: Manufacturing Purpose Scenario. In *Advances in Communication and Computational Technology* (pp. 1109-1119). Springer, Singapore, Scopus.
- Rana, A. K., & Sharma, S. Enhanced Energy-Efficient Heterogeneous Routing Protocols in WSNs for IoT Application.
- IFTTT Rely Based a Semantic Web Approach to Simplifying Trigger-Action Programming for Industry Application Control with IoT Scenario, name of the proceeding -semantic IOT, and Springer book series-Scopus.
- Rana, A. K., & Sharma, S. (2020). Contiki Cooja Security Solution (CCSS) with IPv6 Routing Protocol for Low-Power and Lossy Networks (RPL) in the Internet of Things Applications. In *Mobile Radio Communications and 5G Networks* (pp. 251-259). Springer, Scopus, Singapore.
- Industry 4.0 Manufacturing Based on IoT, Cloud Computing, and Big Data: Manufacturing Purpose Scenario. In *Advances in Communication and Computational Technology* (pp. 1109-1119). Springer, Scopus, Singapore.
- Arun Kumar Rana* and Sharad Sharma, "Internet of Things Based Stable Increased-throughput Multi-hop Protocol for Link Efficiency (IoT-SIMPLE) for health monitoring in Wireless Body Area Networks", *International Journal of Sensors, Wireless Communications and Control* (2021) 11: 1. <https://doi.org/10.2174/2210327911666210120125154> (SCOPUS).

Book and Chapter Publications	
<ul style="list-style-type: none"> Books Authored published by International Publishers 	
<ul style="list-style-type: none"> Books Authored published by National Publishers 	4
<ul style="list-style-type: none"> Publication of Chapter in Edited Books 	12
<ul style="list-style-type: none"> Editor of Book by International Publishers 	2
<ul style="list-style-type: none"> Editor of Book by National Publishers 	
<ul style="list-style-type: none"> Translation Work of Book 	
<ul style="list-style-type: none"> List of Book and Chapter Publications 	<ul style="list-style-type: none"> Microprocessor Application-8085, May 2009(ISBN NO.-978-93-80097-28-2) 8086-Microprocessor & Interfacing,Jan,2010 (ISBN NO.-978-93-80097-28-2) 8051 Microcontroller & Embedded System & PLCs, Feb,2013 (ISBN NO-978-93-82174-14-1) Integrated electrical & electronics engineering, FEB,2013 (ISBN NO.-978-93-82174-67-7) Internet of Things: Energy, Industry, and Healthcare, July 2021 (Taylor & Francis-Scopus Index ISBN-9780367686529) Internet of Things: Evolution of Robotic and Drone Technology, July 2021(Taylor & Francis-Scopus Index ISBN-9780367754532) Kumar, A., & Sharma, S. (2020). Demur and Routing Protocols With application in Underwater Wireless Sensor Networks for Smart City. In Energy-Efficient Underwater Wireless Communications and Networking (pp. 262-278). IGI Global.Chapter Participation of 5G with Wireless Sensor Networks In the Internet-Of-Things (IoT) Application, Wireless Sensor Networks and Internet of Things: Future

	<p>Directions and Applications- ISBN: 9781771889612, CRC group-Taylor and Francis-2020). Chapter</p> <ul style="list-style-type: none"> • Internet of Things (IoT) with Energy Sector-Challenges and Development. In <i>Electrical and Electronic Devices, Circuits and Materials</i> (pp. 183-196). CRC Press. - Taylor and Francis, Scopus). Chapter • IFTTT Rely Based a Semantic Web Approach to Simplifying Trigger-Action Programming for Industry Application Control with IoT Scenario, name of the proceeding -semantic IOT, and Springer book series-Scopus. • Contiki Cooja Security Solution (CCSS) with IPv6 Routing Protocol for Low-Power and Lossy Networks (RPL) in the Internet of Things Applications. In <i>Mobile Radio Communications and 5G Networks</i> (pp. 251-259). Springer, Scopus, Singapore. • MQTT protocol using NodeMCU ESP8266 for Garbage Monitoring System with Proposed Machine Learning Model for Smart City-Machine Learning in IoT-Taylor and Francis). Chapter • Industry 4.0 Manufacturing Based on IoT, Cloud Computing, and Big Data: Manufacturing Purpose Scenario. In <i>Advances in Communication and Computational Technology</i> (pp. 1109-1119). Springer, Scopus, Singapore. • A survey on wearable device for iot applications, Wireless Sensor Networks and the Internet of Things Future Directions and Applications, Internet of Things Robotic and Drone Technology, Taylor and Francis-Scopus-SBN 9780367754532). Chapter • E-learning with Internet of ThingsArchitecture and its Applications, Wireless Sensor Networks and the Internet of Things Future Directions and Applications, Internet of Things Robotic and Drone Technology, Taylor and Francis-Scopus-ISBN 9780367754532). Chapter • Towards Secure Deployment on the Internet of Robotic Things: Architecture, Applications, and Challenges, Multimodal Biometric Systems: Security and Applications-Taylor and Francis- Scopus- ISBN 9780367754532). Chapter • Internet of things: Security Issues, Challenges and its Applications Multimodal Biometric Systems: Security and Applications-Taylor and Francis- Scopus- ISBN 9780367754532). Chapter • steganography using Machine Learning, Wireless Sensor Networks and the Internet of Things Future Directions and Applications- Internet of Things Energy, Industry, and Healthcare, Taylor and Francis-Scopus-ISBN 9780367686529
Patents	

<ul style="list-style-type: none"> Published 	4
<ul style="list-style-type: none"> List of published patent(s) 	<ul style="list-style-type: none"> Smart Garbage Monitoring System using Raspberry pi with the pi camera, application no.-202011004634 (Published). Low K wall spacer based inner gate- application no. 202011033495(Published). AI-Thinker ESP32-CAM for Live Video Streaming and Face Recognition System Based on IoT- Australia-International Patent (Published and Granted). A system for moment of autonomous vehicle and and A method thereof- Australia-International Patent (Published and Granted).
<ul style="list-style-type: none"> Filed 	1
<ul style="list-style-type: none"> List of filed patent(s) 	System and device to facilitate trash monitoring and collection-202111021671 (filed).
PhD Guidance	
<ul style="list-style-type: none"> Degree Awarded 	
<ul style="list-style-type: none"> Thesis Submitted 	
M.Tech. Guidance	
<ul style="list-style-type: none"> Degree Awarded 	5
<ul style="list-style-type: none"> Thesis Submitted 	
Research Project	
<ul style="list-style-type: none"> List of Research project 	A Novel Model for Smart Agriculture using IOT(Under Review)
Consultancy	
<ul style="list-style-type: none"> List of Consultancy 	
Awards & Honours	
<ul style="list-style-type: none"> List of Awards & Honours 	<ul style="list-style-type: none"> Received Innovative Technologist & Dedicated Teacher Award as approved by the International Award Committee which is scheduled to be organized by SOUTH ASIA MANAGEMENT ASSOCIATION, Singapore on 17 Jan, 2021. Received Best Network Security Award by innovation society of India on 2nd Oct-2020. Received Best Teacher Award on Teacher's Day in Panipat Institute of Engineering & Technology, Samalkha, Panipat on 5th Sep-2016.
Invited lectures / Resource Person/ paper presentation in Seminars/	

Conferences/full paper in Conference	
<ul style="list-style-type: none"> • International (Abroad) 	
<ul style="list-style-type: none"> • International (Within Country) 	10
<ul style="list-style-type: none"> • National 	10
<ul style="list-style-type: none"> • List of published papers 	<p>INTERNATIONAL CONFERENCE PUBLICATION</p> <ul style="list-style-type: none"> • Power Generation From Pressure Of Rush Hour Traffic”(ICIT-09, JUNE 18-19, 2009-IEEE At PDM COLLEGE OF ENGG, BAHADHURGARH) • “Industrial Sensing Instruments Lead To Mass Customization”(ICIT-09, JUNE 18-19, 2009 IEEE at PDM COLLEGE OF ENGG, BAHADHURGARH) • “Quality of Service (QoS) Based Scheduling Environment”(ICACCT-2011 IEEE at APPIT, PANIPAT • Inspect Portrayal of Enhancement SEP for Wireless Sensor Network Using Matlab (ISATN-29 MARCH,19) • Review on Artificial Intelligence with the Internet of Things -Problems, Challenges, and Opportunities, IEEE-SCOPUS, GL BAJAJ, OCT-2019. • Industry 4.0 Manufacturing Based on IoT, Cloud Computing, and Big Data: Manufacturing Purpose Scenario, NIT KURUKSHETRA, Springer Scopus, 2019 • Internet of Things (IoT) Solution for Corona COVID-19 Detection, International Conference On Rebuilding Bharat With Artificial Intelligence Interventions After Covid-19 Pandemic: Opportunity And Challenges(A2ICP:2020) • Corona COVID-19 Detection with IoT Device in Healthcare-1st Online International Conference on Advance in Computing, Communication, and Control", 16th-17th June 2020. • Contiki Cooja Security Solution (CCSS) with IPv6 Routing Protocol for Low power and Lossy Networks (RPL) in the Internet of Things Applications, 1st International Conference on Mobile Radio Communications & 5G Network, Springer Scopus, 2020. • Various Swarm Optimization Algorithms: Review, Challenges, and Opportunities, Soft Computing for Intelligent Systems, SCIS-2020, Springer Scopus, 2021. <p>NATIONAL CONFERENCE PUBLICATION</p> <ul style="list-style-type: none"> • “Virtual Reality in the future world”(RESEARCH-2KX, FEB, 19-20, 2010 at HEC, JAGADHARI) • “Advanced Technology in Aviation Networks using IPv6 services”(RESEARCH-2KX, FEB, 19-20, 2010 at HEC,

	<p>JAGADHARI)</p> <ul style="list-style-type: none"> • Edge Detection In image Processing(26th march,2011 at HIM, Sonipat) • SS7 signaling(April,22-23,2011 at piet,Panipat) • OFDM-orthogonal frequency division multiplexing(April,22-23,2011 at piet,Panipat) • Firewall(April,22-23,2011 at piet,Panipat) • Scheduling environment based WiMAX simulation model to investigate QoS With Opnet Modeler, NCETEEE -18th & 19th November 2011. • Survey of Human Skin Color Models and Classification Models, NCITER, APEX, karnal • surveying Blind Deconvolution Problems and Applications NCITER, APEX, karnal. • Reviewing Mathematical Models for Adaptive Noise Reduction Filters NCITER, APEX, karnal.
Organizing National Conference/ International Conference/ FDP/STTP	
• List of Conference/FDP/STTP committee	
Social Contributions and Sports	
• List of Social Contributions and Sports	