Dr. Prateek Raj Gautam

Ph.D., Electronics and Communication Engineering,
Motilal Nehru National Institute of Technology Allahabad

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Work Experience

Assistant Professor – Senior Scale, School of Computer Science *February 2024 – **Present***
UPES Dehradun, Uttarakhand.

Assistant Professor, Computer Science & Engineering *August 2022 – February 2024*
Centre for Advanced Studies, AKTU, Lucknow, UP.

Assistant Professor, Electronics & Communication Engineering *July 2013 – December 2015*
Allehnouse Institute of Technology, Kanpur, UP.

Assistant Professor, Electronics & Communication Engineering *June 2012 – July 2013*
Naraina College of Engineering and Technology, Kanpur, UP.

Education

Ph. D. *2016–2021*
Electronic & Communication Engineering *(Wireless Sensor Networks)*, ***Motilal Nehru National Institute of Technology Allahabad, Prayagraj (UP), India***. Thesis Title: "*Energy Efficient 2D and 3D Localization in Wireless Sensor Networks using Single Anchor Node*".

M. Tech. *2009–2011*
Electronic & Communication Engineering, ***Harcourt Butler Technological Institute (HBTI) Kanpur (UP), India***, with an aggregate of 67.55%. Thesis Title: "*Generalized One Dimentional Optical Orthogonal Coding Scheme for CDMA Systems with its Grouping and Performance Analysis*".

B. Tech. *2004–2008*
Electronics & Communication Engineering, ***University Institute of Engineering and Technology (UIET), CSJMU Kanpur (UP), India***, with an aggregate of 62.00%.

12 (AISSCE) *2004*
Mathematics, Biology, Physics, Chemistry, and English; ***Kendriya Vidyalaya, IIT Kanpur (CBSE)***, with an aggregate of 58.40%.

10 (AISSE) *2002*
Mathematics, Science, Social Studies, Hindi, and English; ***Kendriya Vidyalaya, IIT Kanpur (CBSE)***, with an aggregate of 67.40%.

Research Interests & Courses Delivered

Wireless Sensor Networks (**WSNs**) / Internet of Things (**IoTs**), Energy efficient WSN Localization, Wireless Communication, **CDMA**, **IDMA**, Brain Wave Mapping. Machine Learning **AI/ML** & Computer Vision

Post Grad. (M.Tech.): Machine Learning, Computer Vision, Reinforcement Learning, Internet of Things, Data Communication Networks, Research Methodology, Concepts of Electrical & Electronics Engineering

Under Grad. (B.Tech.): Digital Electronics, Microporcessors, EMFT, Digital Communication, Measurements, Analog Integrated Circuits.

Computer Skills

• **MATLAB** (previous collaborations: github.com/mgeekmatlab), • **LabVIEW**, • **LTspice**, • **Embedded/IoT** design and programming **Arduino IDE/PlatformIO**, • **CST Studio**, • **KiCAD**, • **LaTeX** (pgfplots/tikz/beamer), • **Gnuplot**, • **Word/Excel, LibreOffice**,
• Photoshop/Corel Draw/Inkscape/GIMP, • **Blender**,
• **Github**, • **Web design**: **HTML**, **CSS**, **Javascript**, Git, **DevOps**, **CICD**, Jenkins, Ansible, Github pages, Jekyll, hosting and server management, **WordPress**, **Django** *(Designed and hosted conference (vcas2018) website at MNNIT ECED, online at mnnit.ac.in/vcas2018)*,
• **GO Python** (tkinter/kivy/eel) *(Designed GUI based hotspot software online at fwh.mgeek.in)*, *(Form filler software online at formhelper.mgeek.in)*. • Designed **GeneratorJS** library in JavaScript and **PyGenerator** module in python for website templating and front-end design available online at generatorjs.mgeek.in. • **Docker**, **Proxmox**. • **Linux**, bash, **Nix** and **NixOS**.

Publications Journal(J) Conference(C)

[$J1$] **P. R. Gautam**, S. Kumar, A. Verma, T. Rashid, *et al.*, "Energy-efficient localization of sensor nodes in WSNs using beacons from rotating directional antenna," *IEEE Transactions*

on Industrial Informatics, vol. 15, no. 11, pp. 5827–5836, Nov. 2019. DOI: 10.1109/tii.2019.2908437 issn 1551-3203 **Impact Factor: 12.3** **SCIE, Q1**

[*J*2] **P. R. Gautam**, S. Kumar, A. Verma, and A. Kumar, "Energy-efficient localization of sensor nodes in wsns using single beacon node," *IET Communications*, vol. 14, no. 9, pp. 1459–1466, 2020. DOI: 10.1049/iet-com.2019.1298 issn 1751-8628 **Impact Factor: 1.6** **SCIE, Q2**

[*J*3] A. Verma, S. Kumar, **P. R. Gautam**, and A. Kumar, "Fuzzy logic based effective clustering of homogeneous wireless sensor networks for mobile sink," *IEEE Sensors Journal*, vol. 20, no. 10, pp. 5615–5623, May 2020. DOI: 10.1109/jsen.2020.2969697 issn 1530-437X **Impact Factor: 4.3** **SCIE, Q1**

[*J*4] A. Verma, S. Kumar, **P. R. Gautam**, and A. Kumar, "Neural-fuzzy based effective clustering for large-scale wireless sensor networks with mobile sink," *Peer-to-Peer Networking and Applications*, Jun. 2021. DOI: 10.1007/s12083-021-01167-6 issn 1936-6450 **Impact Factor: 4.2** **SCIE, Q2**

[*J*5] A. Verma, S. Kumar, **P. R. Gautam**, T. Rashid, *et al.*, "Broadcast and reliable coverage based efficient recursive routing in large-scale wsns," *Telecommunication Systems*, vol. 75, no. 1, pp. 63–78, Jun. 2020. DOI: 10.1007/s11235-020-00679-5 issn 1572-9451 **Impact Factor: 2.5** **SCIE, Q2**

[*J*6] M. Yadav, **P. R. Gautam**, V. Shokeen, and P. K. Singhal, "Modern fisher–yates shuffling based random interleaver design for SCFDMA-IDMA systems," *Wireless Personal Communications*, vol. 97, no. 1, pp. 63–73, May 2017. DOI: 10.1007/s11277-017-4492-9 issn 0929-6212 **Impact Factor: 2.2** **SCIE, Q2**

[*J*7] A. Verma, T. Rashid, **P. R. Gautam**, S. Kumar, *et al.*, "Cost and sub-epoch based stable energy-efficient clustering algorithm for heterogeneous wireless sensor networks," *Wireless Personal Communications*, vol. 107, no. 4, pp. 1865–1879, Apr. 2019. DOI: 10.1007/s11277-019-06362-6 issn 0929-6212 **Impact Factor: 2.2** **SCIE, Q2**

[*J*8] T. Rashid, S. Kumar, A. Verma, **P. R. Gautam**, *et al.*, "Co-reerp: Cooperative reliable and energy efficient routing protocol for intra body sensor network (intra-wbsn)," *Wireless Personal Communications*, vol. 114, no. 2, pp. 927–948, Apr. 2020. DOI: 10.1007/s11277-020-07401-3 issn 0929-6212 **Impact Factor: 2.2** **SCIE, Q2**

[*J*9] S. Kumar, **P. R. Gautam**, A. Verma, T. Rashid, *et al.*, "An energy-efficient transmission in wsns for different climatic conditions," *Wireless Personal Communications*, vol. 110, no. 1, pp. 423–444, Sep. 2019. DOI: 10.1007/s11277-019-06735-x issn 0929-6212 **Impact Factor: 2.2** **SCIE, Q2**

[*J*10] S. Kumar, **P. R. Gautam**, T. Rashid, A. Verma, *et al.*, "Division algorithm based energy-efficient routing in wireless sensor networks," *Wireless Personal Communications*, Aug. 2021. DOI: 10.1007/s11277-021-08996-x issn 1572-834X **Impact Factor: 2.2** **SCIE, Q2**

[*J*11] R. C. S. Chauhan, A. Kumar, and **P. R. Gautam**, "Optical orthogonal code generation scheme and grouping of codes for optical CDMA systems," *International Journal of System Assurance Engineering and Management*, vol. 12, no. 1, pp. 91–103, 1 Jun. 2020. DOI: 10.1007/s13198-020-01007-5 issn 0976-4348 **Impact Factor: 2** **SCIE, Q3**

[*J*12] **P. R. Gautam**, A. Verma, S. Kumar, D. Prasad, *et al.*, "Design of directional antennas for wireless sensor networks and the internet of things experiments," *IEEE Sensors Letters*, vol. 6, no. 9, pp. 1–4, 2022. DOI: 10.1109/LSENS.2022.3202919 issn 2475-1472 **Impact Factor: 2.8** **SCIE, Q2**

[*J*13] Shilpi, **P. R. Gautam**, S. Kumar, and A. Kumar, "An optimized sensor node localization approach for wireless sensor networks using rssi," *The Journal of Supercomputing*, vol. 79, pp. 7692–7716, 2022. DOI: https://doi.org/10.1007/s11227-022-04971-w issn 0920-8542 **Impact Factor: 3.3** **SCIE, Q2**

[*J*14] A. Verma, S. Kumar, **P. R. Gautam**, T. Rashid, *et al.*, "Enhanced cost and sub-epoch based stable energy-efficient clustering algorithm for heterogeneous wireless sensor networks," *Wireless Personal Communications*, Jul. 2023. DOI: 10.1007/s11277-023-10601-2 issn 1572-834X **Impact Factor: 2.2** **SCIE, Q2**

[*J*15] S. Kumar, **P. R. Gautam**, T. Rashid, A. Verma, *et al.*, "ETDCC: Energy-efficient transmission scheme for dynamic climatic conditions in WSN," *TELKOMNIKA (Telecommunication Computing Electronics and Control)*, vol. 16, no. 3, p. 1126, Jun. 2018. DOI: 10.12928/telkomnika.v16i3.8513 issn 1693-6930 **Scopus**

[*J*16] T. Rashid, S. Kumar, A. Verma, **P. R. Gautam**, *et al.*, "Pm-EEMRP: Postural movement based energy efficient multi-hop routing protocol for intra wireless body sensor network (intra-WBSN)," *TELKOMNIKA (Telecommunication Computing Electronics and Control)*, vol. 16, no. 1, p. 166, Feb. 2018. DOI: 10.12928/telkomnika.v16i1.7318 issn 1693-6930 **Scopus**

[*J*17] A. Verma, T. Rashid, **P. R. Gautam**, S. Kumar, *et al.*, "Fuzzy based stable clustering protocol for Heterogeneous wireless sensor networks," *International Journal of Engineering and Technology*, vol. 9, no. 4, pp. 2854–2860, Aug. 2017. DOI: 10.21817/ijet/2017/v9i4/170904046 issn 0975-4024 **Scopus 2017**

[*J*18] T. Rashid, S. Kumar, A. Verma, **P. R. Gautam**, *et al.*, "RB-IEMRP: Relay based improved throughput energy-efficient multi-hop routing protocol for intra body sensor network (INTRA-WBSN)," *International Journal of Computer Networks & Communications*, vol. 11, no. 02, pp. 69–82, Mar. 2019. DOI: 10.5121/ijcnc.2019.11205 issn 0974-9322 **Scopus**

[*C*1] **P. R. Gautam**, S. Kumar, A. Verma, and A. Kumar, "Localization of sensor nodes in WSNs using three dimensional angle of arrival detection at BS," in *2019 International Conference on Electrical, Electronics and Computer Engineering (UPCON)*, ZHCET, AMU, Aligarh: IEEE, Nov. 2019, pp. 1–4. DOI: 10.1109/upcon47278.2019.8980262 isbn: 9781728134550 issn 2687-7767 **Scopus**

[*C*2] **P. R. Gautam**, S. Kumar, A. Verma, T. Rashid, *et al.*, *Localization of Sensor Nodes in WSN Using Area Between a Node and Two Beacons* (Lecture Notes in Electrical Engineering). Motilal Nehru National Institute of Technology, Allahabad: Springer, Dec. 2019, vol. 587, pp. 221–228, 1060 pp. DOI: 10.1007/978-981-32-9775-3_22 isbn: 9813297743 issn 1876-1100 **Book chapter**

[*C*3] **P. R. Gautam**, S. Kumar, and A. Kumar, "Sensor localization in wsns using rotating directional - antenna at the base station," in *Advances in VLSI, Communication, and Signal Processing*, ser. Lecture Notes in Electrical Engineering, vol. 683, Motilal Nehru National Institute of Technology, Allahabad: Springer, Oct. 2020, pp. 705–718. DOI: 10.1007/978-981-15-6840-4_58 isbn: 978-981-15-6839-8 issn 1876-1100 **Book chapter**

[*C*4] A. Kumar, S. Kumar, **P. R. Gautam**, A. Verma, *et al.*, *Performance Evaluation of Multi-operands Floating-Point Adder* (Lecture Notes in Electrical Engineering). JK Institute of Applied Physics and Technology, Allahabad University, Allahabad: Springer Singapore, Dec. 2019, vol. 524, pp. 537–546. DOI: 10.1007/978-981-13-2685-1_51 isbn: 9811326843 issn 1876-1119 **Book chapter**

[*C*5] S. Kumar, A. Verma, **P. R. Gautam**, A. Dayal, *et al.*, "The load balancing of optimizing LEACH clustering algorithm with mobile sink and rendezvous nodes," in *2018 5th IEEE Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (UPCON)*, Madan Mohan Malaviya University of Technology,Gorakhpur: IEEE, Nov. 2018. DOI: 10.1109/upcon.2018.8596989 isbn: 978-1-5386-5002-8 issn 2687-7759 **Scopus**

[*C*6] S. Kumar, **P. R. Gautam**, A. Verma, R. Verma, *et al.*, *Energy Efficient Routing using Sectors Based Energy-Hole Reduction in WSNs*. ZHCET, AMU, Aligarh: IEEE, 2019. DOI: 10.1109/upcon47278.2019.8980254 isbn: 978-1-7281-3455-0 issn 2687-7767 **Scopus**

[*C*7] A. Verma, S. Kumar, **P. R. Gautam**, and A. Kumar, *Stable Energy-Efficient Routing Algorithm for Dynamic Heterogeneous Wireless Sensor Networks* (Lecture Notes in Electrical Engineering). Motilal Nehru National Institute of Technology, Allahabad: Springer, Dec. 2019, vol. 587, pp. 221–228, 1060 pp. DOI: 10.1007/978-981-32-9775-3_15 isbn: 9813297743 issn 1876-1100 **Book chapter**

[*C*8] S. Shilpi, **P. R. Gautam**, S. Kumar, and A. Kumar, "A comparative analysis of distance-based node localization in wireless sensor network," in *2021 8th International Conference on Signal Processing and Integrated Networks (SPIN)*, vol. 0, 2021, pp. 118–123. DOI: 10.1109/SPIN52536.2021.9566136 isbn: 9781665435642 issn 0 **Scopus**

[*C*9] M. Yadav, **P. R. Gautam**, and K. Singhal P., "Inverse tree interleavers in uav communications for interference mitigation," in *Decision Support Systems for Smart City Applications* (Concise Introductions to AI and Data Science), Concise Introductions to AI and Data Science. John Wiley & Sons, Ltd, Dec. 2022, ch. 3, pp. 35–52. DOI: 10.1002/9781119896951.ch3 isbn: 9781119896951 issn **Book chapter**

[*C*10] A. Rukasar and P. R. Gautam, "Lane detection and tracking algorithms for driver assistance system," in 2023, pp. 872–879. DOI: 10.1109/icac3n60023.2023.10541447 isbn: 9798350330861 issn **scopus**

[*C*11] V. Kumar, A. Kumar, and **P. R. Gautam**, "Dental disease detection and classification in radiograph images using deep learning model," in 2023, pp. 1198–1203. DOI: 10.1109/ICAC3N60023.2023.10541747 isbn: 9798350330861 issn **scopus**

[*C*12] N. Awasthi, **P. R. Gautam**, and A. Sharma, "Rfecv-dt: Recursive feature selection with cross validation using decision tree based android malware detection," in 2024. DOI: 10.1109/ICCCNT61001.2024.10725127 isbn: 9798350370249 issn **scopus**

[*C*13] M. Ansari and **P. R. Gautam**, "Classification of soil moisture content with the application of deep learning," in 2024. DOI: 10.1109/ICIC3S61846.2024.10603387 isbn: 9798350364088 issn **scopus**

[*C*14] A. Sharma, A. Upadhyay, and **P. R. Gautam**, "Prediction of water discharge in mahanadi river basin, india using artificial neural networks," in 2025, vol. 1, pp. 28–32. DOI: 10.1201/9781003501244-5 isbn: 9781032911571 issn **scopus**

[*C*15] P. Mishra, J. Singh, and **P. R. Gautam**, "Mustard and wheat mildew disease classification using deep learning," in 2025, vol. 1, pp. 72–78. DOI: 10.1201/9781003501244-14 isbn: 9781032911571 issn **scopus**

[*C*16] A. Upadhyay, A. Sharma, and **P. R. Gautam**, "Estimation of sediment load in mahanadi river, india using artificial neural networks," in 2025, vol. 1, pp. 23–27. DOI: 10.1201/9781003501244-4 isbn: 9781032911571 issn **scopus**

[*C*17] M. Ansari and **P. R. Gautam**, "Comparison of different pre-trained deep learning models for classification of soil moisture content," in 2025, vol. 2, pp. 107–113. DOI: 10.1201/9781003561651-15 isbn: 9781032911571 issn **scopus**

Paper presented

"**Localization of Sensor Nodes in WSNs using Three Dimensional Angle of Arrival detection at BS**" In *1st International Conference on VLSI, Communication and Signal Processing (VCAS 2018)* at MNNIT Allahabad (UP) India. *29th November to 1st December 2018*

"**Sensor Localization in WSNs Using Rotating Directional - Antenna at the Base Station.**" In *2nd International Conference on VLSI, Communication and Signal Processing (VCAS 2019)* at MNNIT Allahabad (UP) India. *21st – 23rd October 2019*

Journal Reviewer and Editor

• IEEE Transactions on Industrial Informatics WOS (3), • IET Communications WOS (6), • International Journal of Distributed Sensor Networks WOS (1), • Asian Journal of Cardiology Research (1), • SN Applied Sciences WOS (1), • Telecommunication Systems (3), • Journal of Optical Communications (1), • Optica Applicata (1), • International Journal of Procurement Management (1), and • **AE IJSAEM (8).**

Workshops /FDP

1. **One-week GIAN workshop "Advances in Nanotechnology and its Application in Future Electronics (ANFE-2017)" held at** *MNNIT Allahabad*.
   – **Participated and volunteered** ***6th – 10th November, 2017***
2. **Ten days GIAN workshop on "Internet of Things in Smart Living & Cyber-Physical-Social Systems" held at** *IIT Kanpur*.
   – **Participated and volunteered.** ***8th – 17th January 2018***
3. **Summer training program on "VLSI Design & Embedded System (VDES-2018)" held at** *MNNIT Allahabad*.
   – **Volunteered.** ***13th June – 12th July, 2018***
4. **ATAL Academy FDP on "Blockchain" held at** *MNNIT Allahabad*.
   – **Participated.** ***16th – 20th September 2019***
5. **ATAL Academy FDP on "Artificial Intelligence" held at** *MNNIT Allahabad*.
   – **Participated.** ***10th – 14th December 2019***
6. **One-week short term course on "Computational Physics" held at** *MNNIT Allahabad*.
   – **Participated.** ***1st – 5th March 2021***
7. **One-week FDP on "IPR Awareness and Patent Prosecution" held at** *MNNIT Allahabad*.
   – **Participated.** ***13th – 17th July 2021***
8. **One-week FDP on "Antenna Design and Microwave Applications" held at** *HBTU Kanpur*.
   – **Participated.** ***23th – 27th July 2021***

Workshops facilitated

Manuscript preparation in LaTeX,
Programming with 8051 micro-controller.

Awards and Other Achievements

1. **Awarded national scholarship "RG-NFSC" from UGC.** *2017-2021*
2. **Offered national scholarship "MANF" from UGC based on NET score** *2020*
3. **Eight times GATE qualified.** *2008, 2009, 2012, 2013, 2014, 2016, 2017, and 2020*
4. **Three times UGC NET (Electronics Science) qualified.** *Jul-2016, Jan-2017, and Dec-2019*
5. **Member of IEEE, IEEE Industrial Electronics Society, IEEE Microwave Theory and Techniques Society, and IEEE Broadcast Technology Society.**
6. **NPTEL Online Certification on MATLAB for Numerical Computations.**

References

1. **Dr. Arvind Kumar *Associate Professor*, ECED, MNNIT Allahabad, Teliyarganj, Prayagraj, UP 211004, E.Mail: arvindk@mnnit.ac.in Mob:*7081869266*, – *Ph.D. Thesis Supervisor***
2. **Dr. Arun Prakash *Associate Professor*, ECED, MNNIT Allahabad, Teliyarganj, Prayagraj, UP 211004, E.Mail: arun@mnnit.ac.in Mob:*9794008282*.**
3. **Dr. Basant Kumar *Associate Professor*, ECED, MNNIT Allahabad, Teliyarganj, Prayagraj, UP 211004, E.Mail: singhbasant@mnnit.ac.in Tel:*+91-0532-2271468*.**
4. **Dr. Vijay Shankar Tripathi *Professor*, ECED, MNNIT Allahabad, Teliyarganj, Prayagraj, UP 211004, E.Mail: vst@mnnit.ac.in Mob:*8004818000*.**
5. **Dr. Ram Chandra Singh Chauhan *Associate Professor*, ECED, IET, Sitapur Road, Lucknow UP, E.Mail: ram1.hbti@gmail.com Mob:*9336050184*. – *M.Tech. Dissertation Supervisor***

Personal Profile

Name:	**Dr. Prateek Raj Gautam**
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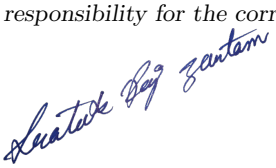
Address:	**E 5409 Avas Vikas 1, Kalyanpur, Kanpur, UP - 208017, India**
Father's name:	**Mr. Shriram Gautam**
Mother's name:	**Mrs. Archana Gautam**

Declaration

I hereby declare that the above information given is true to the best of my knowledge and I bear the responsibility for the correctness of the above-mentioned particulars.



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