

## Dr. Pushpendra Kumar Gupta

Mob. No: - +91-8960419724

E-mail Address: [pushpendranit30@gmail.com](mailto:pushpendranit30@gmail.com)

### EDUCATION/QUALIFICATION

| Standard                                                                                                                                                                               | Institute/School                                                                              | University/<br>Board             | CGPA/<br>Percentage           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|----------------------------------|-------------------------------|
| Ph.D.<br><b>Thesis Title:</b><br>Stability results for discrete-time systems in the presence of nonlinearities, time delays and/or external interference.                              | MNNIT<br>ALLAHABAD,<br>PRAYAGRAJ                                                              | MNNIT<br>Allahabad,<br>Prayagarj | 9.50<br>During<br>course work |
| M. Tech.<br><b>Thesis Title:</b><br>PAPR reduction in OFDM system.                                                                                                                     | IIT (BHU),<br>VARANASI                                                                        | IIT (BHU),<br>Varanasi           | 8.47                          |
| B.Tech.<br>(Electronics &<br>Communication<br>Engineering)                                                                                                                             | UCER, NAINI<br>(Prayagraj)                                                                    | GBTU (now<br>AKTU),<br>Lucknow   | 68.74%                        |
| Equivalent to M.Tech.-<br>AICTE QIP <b>PG</b> Certificate<br>Programme From <b>AI to<br/>Generative AI</b> : Unlocking<br>the power of smart<br>Technologies<br><b>6 Months Course</b> | IIIT Allahabad                                                                                | IIIT<br>Allahabad,<br>Prayagarj  | 9.6                           |
| Intermediate                                                                                                                                                                           | SVM INTER<br>COLLEGE<br>HAMIRPUR                                                              | UP Board                         | 81.6%                         |
| High School                                                                                                                                                                            | SVM INTER<br>COLLEGE<br>HAMIRPUR                                                              | UP Board                         | 71.5%                         |
| <b>Gate</b>                                                                                                                                                                            | <b>Gate</b> qualified in 2011, 2012, 2013 and 2016<br>Highest percentile is <b>99</b> in 2012 |                                  |                               |
| <b>NET</b>                                                                                                                                                                             | <b>NET</b> qualified in 2018                                                                  |                                  |                               |
| <b>Akikrit</b> Scholarship Exam<br>(UP Gov.)                                                                                                                                           | Qualified in 2001 and got scholarship from class 9<br>to class 12.                            |                                  |                               |

**AICTE QIP PG Certificate Programme – *From AI to Generative AI: Unlocking the Power of Smart Technologies***

**Indian Institute of Information Technology (IIIT) Allahabad | Jun 2025 – Dec 2025**

**CGPA: 9.6 | Credits: 18**

- Completed a 6-month postgraduate certificate programme under AICTE QIP.
- **Project Work:** *Skin Cancer Detection using the HAM10000 Dataset*
  - Implemented classification using both basic machine learning models and deep learning architectures.
  - Evaluated model performance and compared traditional ML approaches with CNN-based deep learning methods.

### **SUBJECTS TAUGHT**

- Basic Electronics
- Digital Electronics
- Electronic devices and Circuits
- Integrated circuits
- Analog Electronics
- Signal and System
- Digital Signal Processing
- Material Science
- Wireless Communication
- Control System

### **RESEARCH INTERESTS**

- Skin Cancer detection (Medical Imaging) using **machine learning/deep learning** techniques
- Signal Processing
- Wireless sensor networks
- OFDM
- Discrete-time systems
- Delayed systems
- Finite-wordlength nonlinearities
- Uncertain systems
- Multidimensional systems
- Global asymptotic stability
- Robust stability

### **TEACHING EXPERIENCE- 10.5 YEARS**

- Working as an Assistant professor at **SVNIT, Surat**, from 25.08.26 to till date.
- Worked as an Assistant professor at **C. V. Raman Global University**, Bhubaneswar, Odisha from 26.06.24 to 24.08.26.
- Worked as an Assistant professor at Institute of Engineering and Rural Technology, Prayagraj (**IERT**, Prayagraj) from 7.10.2021 to 24/06/24.

- Worked as an Assistant professor at Govind Ballabh Pant Agricultural and Technological university (**GBPUA&T**)-College of technology (CoT), Pantnagar (From 28.09.2018 – 30.09. 2021) under **TEQIP-III** ( funded by **MHRD** and **World bank**) selected by **NPIU** process.
- Worked as Teaching assistant in MNNIT Allahabad, Prayagarj (From jan 2017-sep 2018).
- Worked as Teaching assistant at IIT (BHU), Varanasi.

## ADMINISTRATIVE EXPERIENCE

- Served as **Hostel Warden of OBH-2** at C. V. Raman Global University, Bhubaneswar, Odisha.
- Served as **Major Project Coordinator** for B.Tech. final-year and M.Tech. second-year students at C. V. Raman Global University, Bhubaneswar, Odisha.
- Served as a **Member of the Institute Innovation Committee** at C. V. Raman Global University, Bhubaneswar, Odisha.
- Served as a **Student Mentor** at the Institute of Engineering and Rural Technology (IERT), Prayagraj, and C. V. Raman Global University, Bhubaneswar, Odisha.
- Served as a **Proctor for 2.5 years** at the Institute of Engineering and Rural Technology (IERT), Prayagraj.
- Served as **In-charge of the Communication Laboratory for 2.5 years** at the Institute of Engineering and Rural Technology (IERT), Prayagraj.
- Contributed to the **NBA accreditation activities** at the College of Technology (CoT), Govind Ballabh Pant University of Agriculture and Technology (GBPUA&T), Pantnagar.
- Served as a **Member of the Anti-Ragging Committee**.
- Served as a **Student Member of the Departmental Doctoral Programme Committee (DDPC)** at Motilal Nehru National Institute of Technology (MNNIT) Allahabad, Prayagraj, during 2017–2018.
- Contributed to the **development and upgradation of postgraduate laboratories** at the College of Technology (CoT), GBPUA&T, Pantnagar.
- Currently serving as the **Departmental Coordinator for the Early Induction Programme** at Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat.
- Serving as a **Member of the Departmental Write-off and Stock Verification Committee** at SVNIT, Surat.

## PUBLICATIONS

### *Book chapters*

1. Gupta, P.K. and Kandanyli, V.K.R., 2021. New LMI criterion to the robust stability of discrete-time systems with time-varying delays and generalized overflow nonlinearities.

- In *Advances in VLSI, Communication, and Signal Processing*, pp. 213-227. Springer Singapore (Scopus indexed).
2. Gupta, P.K., Singh, K. and Kandanvli, V.K.R., 2022. Further results on delay-dependent stability analysis of uncertain discrete-time systems exerting generalized overflow nonlinearities and time-varying delays. In *Recent Trends in Electronics and Communication*, (pp. 1081-1100). Springer Singapore (Scopus indexed).
  3. Maheshwari, O., Singhal, A., Pachalee, V., Trehan, M. and Gupta, P.K., 2022. Survey: advancement in materials and trends in various fields of 3D printing. In *Advances in VLSI, Communication, and Signal Processing*, pp. 421-434. Springer.
  4. Gupta, P.K. and Kandanvli, V.K.R., 2020. New LMI criteria to the global asymptotic stability of uncertain discrete-time systems with time delay and generalized overflow nonlinearities. In *Advances in VLSI, Communication, and Signal Processing*, pp. 883-895. Springer, Singapore (Scopus indexed).
  5. Mondal, R., Verma, A. and Gupta, P.K., 2019. A Medical Diagnostic Information System with Computing with Words Using Hesitant Fuzzy Sets. In *Advances in VLSI, Communication, and Signal Processing: Select Proceedings of VCAS 2018* (pp. 971-980). Springer. (Scopus indexed).

#### ***International Journals (SCI/SCIE/ESCI/Scopus)***

6. Singh, K., **Gupta, P.K.**, Chaurasia, D. and Kandanvli, V.K.R., 2022. Stability of discrete-time delayed systems subject to external interference and generalized overflow nonlinearities. *IEEE Transactions on Industry Applications*, 58(4), pp.5353-5364 (SCI).
7. **Gupta, P.K.**, Singh, K., Kandanvli, V.K.R., and Kar H., 2023. New criterion for the stability of discrete-time systems with state saturation and time-varying delay, *Journal of Control, Automation and Electrical Systems*, Springer. 34(4), pp.700-708. (ESCI, Scopus indexed Journal).
8. **Gupta, P.K.**, Kandanvli, V.K.R., and Kar H., 2024. Delay-dependent LMI condition to the stability of a category of uncertain discrete-time systems exerting quantization/overflow nonlinearities and variable time-lags. *Journal of Systems Engineering and Electronics*. 34(4), pp. 150-161 (Scopus indexed Journal).
9. **Gupta, P.K.**, Verma, A., Gupta, P., Maheshwari, O., Singhal, A. and Kumar, M., 2024. Energy-efficient adaptive clustering (EEAC) with rendezvous nodes and mobile sink. *International Journal of Communication Systems*, Wiley. 37(2), pp.e5643 (SCIE)
10. **Gupta, P.K.**, Verma, A., Gupta, P., et al., 2024. Balanced grouping scheme for efficient clustering in WSN with multilevel heterogeneity. *Wireless personal Communication, Springer*. 135, 1539–1560. (SCI).
11. **Gupta, P.K.**, Kandanvli, V.K.R., and Kar H., 2026. New result for the  $H_\infty$  suppression of overflow oscillations in externally interfered discrete-time systems with delay and saturation. *Australian Journal of Electrical and Electronics Engineering*, Taylor and Francis. (Under review).
12. Mishra, H., Kesharwani, A., Shekhar, S., Kumar, A., Sharma, A., Gupta, P.K. and Gaurav, Y., 2025. UWB bandpass filter with tilted square shape ring topology sandwiched in the middle of interdigital structure. *Australian Journal of Electrical and Electronics Engineering*, 22(4), pp.569-574.
13. Nayak, S., Parija, S.R. and Gupta, P.K., 2024. Assessing stability in discrete-time systems impacted by interference and state delays: An approach using ISS. *e-Prime-Advances in Electrical Engineering, Electronics and Energy*, 10, p.100828.

14. Swagatika Nayak, Smita Rani Parija, **Pushpendra Kumar Gupta**, V. Krishna Rao Kandavli, 2026. "IOSS criterion for Lipschitz nonlinear fixed point discrete-time systems employing external interference and saturation overflow". *International Journal of Electrical and Electronics Research*, 14(2), 572-580.
15. **Gupta, P.K.**, Verma, A., 2026. A Wireless Sensor Networks (WSNs): Taxonomy and Routing Survey on Artificial Intelligence (AI), Internet of Things (IoT), and 5G/6G. *Wireless personal Communication*, Springer. (Communicated)(SCIE).

### ***International Conferences***

16. Gupta, P.K. and Kandavli, V.K.R., 2020. New LMI criteria to the global asymptotic stability of uncertain discrete-time systems with time delay and generalized overflow nonlinearities. In *Advances in VLSI, Communication, and Signal Processing*, pp. 883-895. Springer, Singapore (Scopus indexed).
17. Gupta, P.K., Singh, K. and Kandavli, V.K.R., 2020. Further LMI conditions to the stability of the delayed discrete-time systems subject to generalized overflow nonlinearities and parameter uncertainties. In *2020 IEEE 7th Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (UPCON)*, (pp. 1-6). IEEE. (Scopus indexed).
18. Gupta, P.K., Singh, K. and Kandavli, V.K.R., 2022. Further results on delay-dependent stability analysis of uncertain discrete-time systems exerting generalized overflow nonlinearities and time-varying delays. In *Recent Trends in Electronics and Communication*, (pp. 1081-1100). Springer Singapore (Scopus indexed).
19. Singh, K., Gupta, P.K., Chaurasia, D. and Kandavli, V.K.R., 2022. Stability criterion for implementing discrete-time delayed systems subjected to finite wordlength nonlinearities with external interference. In *Recent Trends in Electronics and Communication*, pp. 1101-1110. Springer Singapore (Scopus indexed).
20. Singh, K., Gupta, P.K., Chaurasia, D. and Kandavli, V.K.R., 2020. Stability of Discrete-Time Delayed Systems subject to External Interference and Generalized Overflow Nonlinearities. In *2020 IEEE 7th Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (UPCON)* (pp. 1-6). IEEE. (Scopus indexed).
21. Mondal, R., Verma, A. and Gupta, P.K., 2019. A Medical Diagnostic Information System with Computing with Words Using Hesitant Fuzzy Sets. In *Advances in VLSI, Communication, and Signal Processing: Select Proceedings of VCAS 2018* (pp. 971-980). Springer. (Scopus indexed).
22. Mishra, P., Mohapatra, S.S., Yadav, A.K. and Gupta, P.K., 2025, October. Delay and Packet Loss Compensation of Control System: An Edge-IoT Prospective. In *2025 International Conference on Cognitive, Green and Ubiquitous Computing (IC-CGU)* (pp. 1-6). IEEE.
23. Badaik, K., Kumar, R., Gupta, P.K. and Muduli, D., 2026, June. DSD-ML: A Dual-Stream Based Deep Meta-learning Framework for Automated Melanoma Detection. In *International Conference on Frontiers in Advanced Computing and Emerging Intelligent Technologies* (pp. 425-434). Cham: Springer Nature Switzerland.

### **PATENTS/IPR FILED**

- Miniaturized narrow band-pass filter. (Indian Utility Patent)

Application no. 202411041469, Patent no. 568467 (Indian Utility Patent)

**Status: Granted**

- AI Based Mathematical Equation Analysing Device (Design Patent) Publication date: 2026/12/2, Patent number: 481406-001

**Status: Granted**

- A nano biosensor for sustainable agricultural practice and food industries.  
Application no. 202441020870, Patent application no. TEMP/E-1/24628/2024-CHE. (Indian Utility Patent)

**Status: Published.**

- A method for remote monitoring and control agricultural irrigation.  
Application no. 202441030130. (Indian Utility Patent)

**Status: Published.**

- Artificial Intelligence Based Adaptive PAPR Reduction Method for OFDM Communication Systems,” Indian Patent Application No. 202531127726 A

**Status: Published and Under examination**

## STUDENT SUPERVISION

**Ph.D. 03** (Ongoing)

Student Name: Swagatika Nayak, Bharat Kumar, Chandragupta Thatta

**B.Tech. 18** groups supervised

## FDP / WORKSHOP / SHORT TERM COURSES ATTENDED

- Work shop on “**LABVIEW**” held in **IIT-BHU, VARANASI** in collaboration with **NATIONAL INSTRUMENTS** on 8 march 2013.
- Work shop on “**Dynamical Systems: Theory & Applications**” (**DSTA 2017**) held In **IIT-ISM, Dhanbad** from 08 -12 may 2017
- Work shop on “**Data Analysis & Machine Learning**” held in **MNNIT, ALLAHABAD** on 29 May-2 June 2017.
- Successfully completed 2 week (6-22 Apr 2020) online certification course on **Digital transformation in teaching learning process** offered by **IIT Bombay**.
- Attended FDP on **Matrix Inequalities and its Applications** at **NIT, Uttarakhand** on 2019-07-22 to 2019-07-26.

## PROFESSIONAL MEMBERSHIP

- Member of IEEE
- Associate member of The Institution of Engineers (India).