

# RAHUL PAL

MANIT Bhopal, Bhopal-462051, India

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## EDUCATION

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| Doctor of Philosophy, Wireless Communication<br>Indian Institute of Technology (BHU) Varanasi, India<br>Department of Electronics Engineering                                                    | <i>2015 - 2019</i> |
| Master of Technology, Electrical Engineering<br>Delhi Technological University Delhi, India<br>Department of Electrical Engineering                                                              | <i>2013 - 2015</i> |
| Bachelor of Technology, Electronics and Communication Engineering<br>University Institute of Engineering and Technology Kanpur, India<br>Department of Electronics and Communication Engineering | <i>2009 - 2013</i> |

## PROFESSIONAL EXPERIENCE

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Dr. Rahul Pal is currently an Assistant Professor at Maulana Azad National Institute of Technology (MANIT), Bhopal, India, since January 5, 2024. Previously, he served as an Assistant Professor at Pandit Deendayal Energy University (June 2022–January 2024), VIT Bhopal University (January–May 2022), GITAM University, Bengaluru (July 2021–January 2022), and NIT Sikkim (February 2020–July 2021), gaining extensive academic experience.

## INTERNATIONAL JOURNALS

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1. Rahul Pal, K. V. Srinivas, and A. K. Chaitanya, “A Beam Selection Algorithm for Millimeter-Wave Multi-User MIMO Systems,” in *IEEE Communications Letters*, vol. 22, no. 4, pp. 852-855, April 2018.
2. Rahul Pal, A. K. Chaitanya, and K. V. Srinivas, “Low-Complexity Beam Selection Algorithms for mmWave BeamSpace MIMO Systems,” in *IEEE Communications Letters*, vol. 23, no. 4, pp. 768-771, April 2019.
3. Rahul Pal, K. P. Sarawadekar, and K. V. Srinivas, “A Decentralized Beam Selection Algorithm for mmWave BeamSpace Multi-User MIMO Communication Systems,” in *Elsevier AEU-International Journal of Electronics and Communications*, vol. 111, p. 152884, August 2019.
4. Rahul Pal, Kishor P. Sarawadekar, “Distributed RIS-Assisted mmWave Multi-User MIMO BeamSpace System,” in *Elsevier AEU-International Journal of Electronics and Communications*, vol. 161, p. 154560, January 2023.
5. Rahul Pal, Vikram Singh, and Vijaya Mareedu, “Performance evaluation of AI-based CSI feedback schemes compliant with 3GPP standards,” in *Elsevier Physical Communication*, vol. 72, p. 102803, August, 2025.

## INTERNATIONAL CONFERENCES

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1. Rahul Pal and Kishor P. Sarawadekar, “Performance Study of mmWave BeamSpace MU-MIMO-NOMA Communication System,” *IEEE International Conference on Advanced Networks and Telecommunications Systems (ANTS)*, GOA, India, 2020, pp. 1-6.

2. Rahul Pal and Kishor P. Sarawadekar, "A Cross-Entropy Minimization based Beam Selection for Time-Variant mmWave Beam-space MU-MIMO Communication System," IEEE International Conference on Advanced Networks and Telecommunications Systems (ANTS), GOA, India, 2020, pp. 1-5.
3. S. Das, S. Maurya and R. Pal, "Transforming High-Speed Train Communication with Intelligent Reflecting Surfaces: A Comprehensive Review," 2024 IEEE Silchar Subsection Conference (SILCON 2024), Agartala, India, 2024, pp. 1-6.
4. E. S. Sebastian, Rahul Pal, Shikha Maurya, "Modulation Classification with a Light," IEEE Conference On Computing and Networking Technologies (ICCCNT), Indore, India, 2025, pp. xx-xx.

#### INTERNATIONAL BOOK CHAPTERS

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1. R. Pal, G. Modanwal, S. Chatterjee, and K. P. Sarawadekar, "Hybrid Beamforming for Secured mmWave MIMO Communication," Security and Privacy in Cyberspace, Blockchain Technologies, Springer Nature, Singapore, 2022, DOI: [https://doi.org/10.1007/978-981-19-1960-2\\_11](https://doi.org/10.1007/978-981-19-1960-2_11).
2. Rahul Pal and Debashis Adhikari, "Simplified Min-Sum Approach for Beam Selection in mmWave 2D-Beam-space Multi-User MIMO Systems," Mathematical Algorithms of Computational Intelligence in IoT, Springer Nature, Malta, 2024, pp. xx-xx.

#### PROJECTS & CONSULTANCY

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1. I have completed a consultancy project on AI-based CSI compression and reconstruction for B5G, sponsored by Gigayasa Wireless Pvt. Ltd., at the IIT Madras Research Park, India, with a project amount of 70,800 INR.

#### RESEARCH TALK DELIVERED

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- Delivered a talk at the AICTE-sponsored ATAL-FDP on the topic "Applications of Wireless Ad-hoc Networks" on September, 2020.
- Delivered a talk at Fr. C. Rodrigues Institute of Technology (Affiliated with the University of Mumbai) on the topic "5G Networks" on February, 2024.
- Delivered a talk and hands on at NIT Bhopal on the topic "MIMO: Beamforming and Power Allocation" on May, 2024.
- Delivered a talk and demonstrate hands on at NIT Bhopal on the topic "AI in Communication" on May 2025.
- Delivered a talk and demonstrate hands on at NIT Bhopal on the topic "5G and Beyond" on Jan 2025.
- Delivered a talk at Narasaraopeta Engineering College (NEC), AP on the topic "MIMO: Beamforming, Spatial Multiplexing & Simulation of Massive MIMO Systems using PYTHON" on July , 2025.
- Delivered a talk at NIT warangal on the topic "PYTHON for Massive MIMO" on August, 2025.

## PROJECT SUBMITTED

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- Submitted a project titled “AI for CSI Feedback in 6G” to the DoT under the 6G research proposal.
- Submitted a project titled “Research, Design, and Development of an AI-Based OTFS Transceiver” to the DoT under the 6G research proposal.
- Submitted a project titled “Design and Implementation of AI-Based CSI Feedback for 5G and 6G Networks” to the Prime Minister’s Early Career Research Grant (PMERG).
- Submitted a project titled “Design and Development of Multipath Mitigation Techniques and Algorithm using Advanced Correlators in Baseband Signal Processing” to ISRO.

## RESEARCH PROGRAMS ATTENDED

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1. Attended “MIMO-OFDM Wireless Communications” short-term course at IIT KANPUR during Feb 19-21, 2016.
2. Attended “Signal Processing for 5G Massive MIMO Wireless Systems” short-term course at IIT Kanpur during Jan 28-30, 2017.
3. Attended “Optimization for 5G Cellular Networks, Compressive Sensing and Data Science: With CVX-MATLAB Project” short-term course at IIT Kanpur during Oct 5-8, 2017.
4. Attended “Information Network Information Theory” Gyan course at IIT Kanpur during March 15-24 2018.
5. Attended “Recent Advances in Engineering Science and Technology” TEQIP-sponsored workshop at NIT Sikkim during March 1-5, 2020.
6. Attended “5G Cooperative Communication and NOMA Wireless Technology” short-term course in online mode conducted by IIT Kanpur during October 9-11, 2020.
7. Attended “5G and Beyond Wireless Technologies: Modelling and Simulations using MATLAB” TEQIP sponsored short-term course in online mode conducted by IIT Indore during December 24-26, 2020.
8. Attended “Emerging ICT Trends Towards Atmanirbhar Bharat” TEQIP sponsored short-term course in online mode conducted by IIT Indore during December 28-30, 2020.
9. Attended “Machine Learning for Data Science using Python” short-term course in online mode conducted by NIT Warangal during March 1-10, 2021.
10. Attended “PYTHON + MATLAB-Based Summer Research School on Convex Optimization for Machine-Learning and 5G Wireless Technology” short-term course in online mode conducted by IIT Kanpur during June 14-27, 2021.

## REVIEWER

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| 1. IEEE Access        | 3. IEEE Wireless Comm. Letters        |
| 2. IEEE Comm. Letters | 4. IEEE Transaction of Wireless Comm. |

## **COURSE TAUGHT**

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- 1. Fundamentals of Wireless Communications**
- 2. Information Theory and Coding**
- 3. Analog and Digital Communication**
- 4. Wireless Communication Systems**
- 5. Digital Signal Processing**
- 6. Computer Networks**
- 7. Detection and Estimation Theory**
- 8. Probability and Random Process**