

Dr. Varun Kumar

CURRENT PROFILE:	Assistant Professor IIIT Vadodara Diu Campus, Daman and Diu (UT), PIN - 362520	mob:+91-8249065437,8018198380 email:varun_kumar@diu.iiitvadodara.ac.in 11 March 2022- onward
TEACHING EXPERIENCE:	Assistant Professor (On Contract) IIIT Surat Gujarat, PIN - 395007	Jan 2020 to March-2022
	Assistant Professor GHRCE Nagpur Maharashtra, PIN - 440016	June-2019 to January-2020
DOCTOR OF PHILOSOPHY	National Institute of Technology, Rourkela Dept. of Electronics and Communication Engg. Specialization: Wireless Communication Current Area of Research: <ol style="list-style-type: none">1. Hardware mismatch modeling in TDD massive MIMO system2. Analysis of detrimental effect of antenna correlation on massive MIMO network.3. Application of massive MIMO in relay network under different cooperation protocol.	
MASTER'S EDUCATION	National Institute of Technology, Rourkela Dept. of Electronics and Communication Engg. Specialization: Communication & Networks. Broad Area of Research: Ground Penetrating Radar Thesis: Ground Penetrating Radar(GPR) , Modeling, Optimization and Signal Processing Offered by National Institute of Technology Rourkela,Odisha Description: Detection of electrical characteristics of layered surface or shallow sub surface and signal processing for object detection	M-Tech- 2012 - 2014 CGPA- 8.23
BACHELOR DEGREE	Kalinga Institute of Technology, Bhubaneswar Dept. of Electronics and Communication Engg. Degree: Electronics & Tele-Communication & Networks. Hybrid Intelligence for Driver Assistance Tools Used:WINAVR,PonyProg,Proteus,AVR Studio Description:To make an autonomous vehicle that is capable of avoiding collision	B-Tech - 2007 - 2011 CGPA-8.05
12STD	S.S Sinha College Aurangabad , Bihar	Intermediate- 2003 Percentage - 65
10STD	Anugrah Inter College Aurangabad, Bihar	2001 Percentage - 81.43
TECHNICAL SKILLS	Programming Language: C, C++, Sci-Lab, MATLAB Devices: Signal Analyzer(EXA), Network Analyzer(E5071C VNA), Spectrum Analyzer	

AREA OF INTEREST	<ul style="list-style-type: none"> • Massive MIMO, Cooperative Network, Cognitive Radio • Machine learning, deep learning • Signal Processing (Specially estimation and detection theory) • Ground Penetrating Radar (GPR)
PREVIOUS SELECTION	AIEEE 2007, AIR-11509
POSITION AND RESPONSIBILITY	<ul style="list-style-type: none"> • Time table in charge -IIIT Surat (2021-2022) • In charge of Ruminare e-cell IIIT Surat (2019-2022) • Mentor of KIIT Robotics Society (2008-2010)
SHORT TERM COURSE	<ol style="list-style-type: none"> 1. Deliver a lecture having title “ Multi objective optimization”, a short term training program, Phase -II -AICTE sponsored STTP, SHRI SHANKARACHARYA GROUP OF INSTITUTIONS - [SSGI], BHILAI 2021 2. Deliver a lecture having title “ Machine Learning: A Pioneer for Modern Industry”, a short term training program, Phase -II -AICTE sponsored STTP, Hindustan Institute of Technology and Science, Chennai 2020 and 2021 3. Deliver a lecture on mm-Wave communication and full duplex radio, a short term course ”Modern Wireless Communication: Towards 5G” organized by NIT Rourkela 2019
	Attended:
	<ol style="list-style-type: none"> 1. “<i>Estimation theory for communication and signal processing</i>” organized by Dept. of electrical engg, IIT Kanpur 21 – 23rd jan 2015 2. “<i>MIMO wireless communication: Fundamentals and Advancement</i>”, Bharti school of telecommunication and management IIT Delhi , 6 – 11th jun 2015 3. Electronic & ICT Academy, supported by Ministry of Electronics and Information Technology (MeitY). Govt of India, IIT Guwahati, 3 – 10th Dec 2018
FDP	<ol style="list-style-type: none"> 1. Applied Optimization for Wireless, Machine Learning, Big Data, Swayam NPTEL program 2. Evolution of Air Interface Towards 5G, Swayam NPTEL program
HONOR	<ul style="list-style-type: none"> • Reviewer of IEEE Transaction on Green Communication and Networking. • Reviewer of Transactions on Emerging Telecommunications Technologies • Reviewer of IEEE System Journal. • Reviewer of IET Communication • Reviewer of International Journal of Electronics, Taylor & Fransis
MEMBERSHIP	IEEE,
ACHIEVEMENT	<ul style="list-style-type: none"> • Selected in top hundred candidates at the section “Agritech and livestock” in 5G Hackathon 2020 GoI initiative under startups India. • Won 1st prize in Crack the track an image processing robotics event at KRITANSH a techno-management fest of KIIT University in 2010.

Journals

1. **Varun Kumar**, Sarat Kumar Patra, Poonam Singh, “*Massive MIMO in Cooperative Network with Multiple Relay Under Imperfect CSI*”, International Journal of Electronics (Taylor and Francis) 2020, DOI- 10.1080/21681724.2020.1726481
2. **Varun Kumar**, Sarat Kumar Patra, Poonam Singh, “*Mean Based Reciprocity Calibration in TDD Massive MIMO system*”, vol. 14, pp-4038-4047, IET Communication 2020, doi-10.1049/iet-com.2019.1049
3. **Varun Kumar**, Sarat Kumar Patra, Poonam Singh, “*Sum-Rate Maximization for Hybrid Beamforming in Millimeter Massive MU-MIMO System*”, IEEE Transaction on Green Communication, 2020 March **Under review**

Conference

1. **Varun Kumar**, “*Outage Probability in Large Antenna System for Cooperative Network under Cooperative Decoding*”, IEEE conference I2CT, Pune, 2021, doi- 10.1109/I2CT51068.2021.9418053
2. Prabhat Kumar, Poonam Singh, **Varun Kumar** “*Performance Analysis of RZF Precoding and Mean Based Calibration for Channel Reciprocity*” International Conference on Computing, Communication and Security (ICCCS), 2020, doi-10.1109/ICCCS49678.2020.9277355
3. **Varun Kumar**, Mangal Singh, Sarat Kumar Patra, Poonam Singh *Hybrid CR Network: An Approach Based on Interweave and Underlay type CR Network*. ESIC springer conference, 2020, doi-https://doi.org/10.1007/978-981-15-7031-5_104
4. Indrasen Singh, Rajiv Verma, **Varun Kumar**, Vinay Kumar, Amit P Joshi and Kamlesh A Kalbande “*Outage Probability of Device-to-Device Communication Underlaying Cellular Network over Nakagami/Rayleigh Fading Channels*” IEEE conference ICE-TET 19, doi-10.1109/ICETET-SIP-1946815.2019.9092306
5. **Varun Kumar**, Sarat Kumar Patra, Poonam Singh, “*Large Antenna Performance with Imperfect CSI in Cooperative Networks*”, IEEE Conference Region 10 Connect 2018, doi-10.1109/CONECCT.2018.8482391
6. **Varun Kumar**, Sarat Kumar Patra, Poonam Singh, “*Achievable Rate and Power Efficiency of Massive MIMO in Cooperative Network with ZF Receivers*”, IEEE Conference Region 10 Tencon 2017 doi- 10.1109/TENCON.2017.8228400
7. **Varun Kumar**, Sudhansu Arya, Sarat K Patra, “*Achievable Rate and Power Efficiency in Uplink Massive MIMO System Under Antenna Correlation*” IEEE Conference ANTS 2017, doi-10.1109/ANTS.2017.8384115
8. **Varun Kumar**, Subrata Maiti, “*A Novel Characterization of Shape of Pulse in GPR Signal Transmission*”, IEEE Conference ICCSP 2014 doi-10.1109/ICCSP.2014.6949983