Area of Summer Internship 2024 for the Undergraduate Students

Name of Faculty Mentor	Area of Summer Internship 2024	Remarks
Department Of Astronomy, Astrophysics And Space Engineering (DAASE)		
Dr. Unmesh Govind Khati	1. Remote sensing techniques 2. Remote sensing applications 3. AI/ML applications in earth observation 4. AI/ML applications in remote sensing 5. Modeling biophysical parameters using remote sensing data 6. Drone based imaging and applications 7. Drone sensor integration and calibration	
Dr. Narendra Nath Patra	Radio Astronomy	
Department of Biosciences and Biomedical Engineering (BSBE)		
Dr. Hem Chandra Jha	1. Role of pathogens in gastric cancer. 2. Virus induced neurological disorders.	
Professor Prashant Kodgire	1. Molecular Immunology 2. Molecular Biology 3. Infectious Biology	
Dr. Kiran Bala	Algal bioprocesses	
Dr. Hitendra Kumar	Bidirectional membrane stretching platform development	

Dr. Mirza S. Baig	Chronic Inflammation and Drug Discovery	
Dr. Lokesh Basavarajappa	Development of multiparametric ultrasound imaging	
Dr. Sourav Chandra	Digital Signal Processing, Biomedical Instrumentation	
Department of Chemistry		
Dr. Chelvam Venkatesh	Total synthesis of biologically important natural products; Design and synthesis of heterocycles and carbocycles of biological importance; Developing new methodologies for construction of C-C and C-X (X =N,O,S,P) bonds; Design, synthesis and diagnostic applications of new targeting ligands for cancers and inflammatory diseases; Drug delivery systems, near-infra red fluorescence, nuclear Imaging and bio-conjugate chemistry; Synthesis of Inhibitors for drug targets	
Dr. Debayan Sarkar	Visible Light Asymmetric catalysis.	
Department of Civil Engineering		
Professor Sandeep Chaudhary	Sustainable Construction (subareas listed below) 1. Improving the use of recycled aggregates, through aggregate treatment. 2. Development of naturally coloured construction materials for reducing plaster and paint requirements. 3. Use of discarded cement bags as fibres in concrete.	
Professor Neelima Satyam	Geotechnical engineering, geohazards	
Dr. Mayur Shirish Jain	Environmental Engineering; Waste Management; Renewable Energy	
Dr. Priyank J. Sharma	Hydrology, Water Resources, Climate Change	

Dr. Kaustav Bakshi	Dynamics of civil engineering structures, design of steel-concrete composites using Staad.Pro	
Dr. Gourab Sil	Traffic Engineering, Road Safety, Geometric Design	
Dr. Baadiga Ramu	Geosynthetic reinforced pavements and geotechnical engineering	
Dr. Sridharan Balakrishnan	Hydraulic and water resources engineering	
Dr. Akshay Pratap Singh	Geotechnical Engineering, sustainable construction	
Dr. Priyansh Singh	Pavement Materials	
Department of Computer Science and Engineering		
Dr. Soumi Chattopadhyay	AI, Machine learning	
Dr. Subhra Mazumdar	Blockchain and Distributed Systems	
Dr. Puneet Gupta	Deep Learning, Computer vision	
Dr. Chandresh Kumar Maurya	ML, DL, NLP, GenAI	
Professor Neminath Hubballi	Computer Networks, Cyber Security	
Dr. Surya Prakash	Biometrics, Machine Learning, Deep Learning, Pattern Recognition, Computer Vision, Image Processing	
Professor Aruna Tiwari	AI/ML, Big Data Analytics, Generative AI	
Dr. Ayan Mondal	Edge computing for IoT	

Dr. Nagendra Kumar	Natural Language Processing, Computer Vision, Machine Learning, Deep Learning, Data Mining	
Dr. Ranveer Singh	Algorithms	

Department of Electrical Engineering

Professor Ram Bilas Pachori	Signal Processing and Machine Learning	
Professor Vimal Bhatia	AI/ML, Wireless Communications, Quantum Communications	
Dr. Swaminathan Ramabadran	6G and Beyond Wireless Communications, Deep Learning for Communication	
Professor Santosh Kumar Vishvakarma	SRAM Memory Architectures In-Memory Computing for AI Chips (SRAM, RRAM/MRAM) AI Hardware Accelerators Reliable and Secure Circuits Silicon Photonics Circuits	
Dr. Sumit Gautam	1. Optimization methods for SWIPT systems 2. Quantum Communications	
Professor Trapti Jain	Data analytics and AI applications in smart grid	
Dr. Lokesh Kumar Dewangan	Power Electronics and Power Systems	
Dr. Balasubramanyam Appina	Image and video processing	
Dr. Saptarshi Ghosh	1. Electromagnetics 2. Antennas 3. Reconfigurable intelligent surfaces	

	4. Frequency selective surfaces	
Dr. Dibbendu Roy	1. Extended Reality 2. AI in Communications	
School of Humanities and Social Sciences		
Professor Pritee Sharma	1. Environmental Economics 2. Agricultural Economics.	
Dr. Mohanasundari Thangavel	Economics	
Professor Ruchi Sharma	Economics	
Dr. Akshaya Kumar	Media Studies, Platform Economy	
Department of Mathematics		
Dr. Santanu Manna	AI-ML with Earthquake DATA, Earthquake Statistical Analysis, PDEs, Dynamic Stiffness Matrix Formulation	
Department of Mechanical Engineering		
Dr. Shanmugam Dhinakaran	Computational Fluid Dynamics	
Dr. Santosh Kumar Sahu	Thermal management of electronic devices, jet impingement cooling, synthetic jets, electric battery thermal management, phase change materials	

[Professor Pavan Kumar Kankar](#)	Applications of machine learning, condition monitoring, reliability	
[Dr. Harekrishna Yadav](#)	Fluid flow, heat transfer and renewable energy	
[Dr. Indrasen Singh](#)	Deformation behaviour of sandwich structures	
[Dr. Vibhor Pandhare](#)	Data driven decision making in Healthcare and manufacturing applications	
[Dr. Dan Sathiaraj](#)	Additive Manufacturing	
[Dr. S. Janakiraman](#)	Advanced Materials for Electrochemical Energy Storage Applications	
[Professor Devendra Deshmukh](#)	Automotive engineering, Fluid mechanics, IOT	
[Professor I A Palani](#)	Mechatronics system design and soft robotics	
Department of Metallurgical Engineering and Materials Science (MEMS)		
[Dr. Hemant Borkar](#)	Lightweight materials for automotive applications Deformation behavior of lightweight materials Additive manufacturing of light alloys	
[Dr. Rupesh Devan](#)	1. Materials for energy storage 2. Photo active materials for water remediation.	
[Dr. Jayaprakash Murugesan](#)	Additive manufacturing, fatigue and fracture of advanced materials, alloy development, materials joining, mechanical behavior of materials	
[Dr. Nisheeth Kumar Prasad](#)	Corrosion prevention	

[Dr. Ram Sajeevan Maurya](#)	Alloy design and development, Metallic glass, Powder Metallurgy	
[Dr. Ajay Kumar Kushwaha](#)	Nano and Quantum Materials Compound Semiconductors Green Hydrogen: Materials & Technologies	
[Dr. Vinod Kumar](#)	1. Spark plasma sintering of advanced metallic systems. 2. Development of composite materials using industrial waste	
[Dr. Dhirendra Kumar Rai](#)	Energy harvesting and storage	
Department of Physics		
[Professor Rajesh Kumar](#)	Raman spectroscopy and Raman Microscopy, Nanomaterials and nanodevices, Smart windows, Energy Storage Devices	
[Professor Preeti Anand Bhobe](#)	Electrical transport in composites.	
[Professor Sarika Jalan](#)	Nonlinear dynamics and Complex systems, Machine learning	
[Professor Krushna R Mavani](#)	Experimental Condensed Matter Physics	
[Dr. Manavendra N Mahato](#)	Topics in Quantum Field theo General relativity, Topics in Applied Quantum Mechanics.	
[Professor Ankhi Roy](#)	Detector Physics	
[Professor Somaditya Sen](#)	Material Characterization	
[Dr. Debajyoti Sarkar](#)	Black hole physics, AdS/CFT duality, Quantum entanglement in field theory	

[Dr. Dipankar Das](#)	Advanced topics in Quantum Mechanics, Introductory Particle Physics, Computational Methods in Physics	
[Dr. Mritunjay Kumar Verma](#)	High energy physics, quantum field theory, General relativity, string theory	

Important Note:

1. **Fees once paid is non-refundable.**
2. **The Undergraduate Students are requested to contact concerned faculty mentor for any query/clarification.**
3. **Consent from the faculty mentor of IIT Indore is a must.**