SINCE 2007

takeoff edu GROUP

Ministry of MSME, Govt. of India

ACADEMIC PROJECTS 2026-2027

ELECTRONICS & COMMUNICATIONS

- Embedded Systems
- VLSI / FPGA Design
- IoT Applications
- Wireless Communication
- Image / Signal Processing
- Antenna Design
- Robotics & Automation

& many more domains

+91 9030333433

www.takeoffprojects.com

Skill India कौशल भारत-कुशल भारत

NASSCOM®

TOGETHER FOR BETTER TOMORROW TCOAP TECHNOLOGICAL COMPANION OF ANDHRA PRADESH

CERTIFIED ISO 9001:2015 COMPANY

#startupindia

CII Confederation of Indian Industry

MATLAB TITLE LIST 2026-27

IMAGE PROCESSING

Latest Titles

S.No	Title / Objective / Tools	Domain
1	**DCGC-UNet: A Directional Convolution Gating Control U-Net for Dental X-Ray Image Segmentation** **Objective:** *To design a U-Net based segmentation model with directional convolution gating for accurate delineation of dental structures in X-ray images.* **Tools:** U-Net, Directional Convolution, Gating Mechanism, Deep Learning Toolbox **Software:** MATLAB	**DL**
2	**FlexICL: A Flexible Visual In-Context Learning Framework for Elbow and Wrist Ultrasound Segmentation** **Objective:** *To build a flexible in-context learning framework that segments elbow and wrist structures in ultrasound images from minimal labeled examples.* **Tools:** Visual In-Context Learning, Few-Shot Learning, CNN, Deep Learning Toolbox **Software:** MATLAB	**DL**
3	**Referring Remote Sensing Image Segmentation via Multiscale Spatially-Guided Joint Prediction** **Objective:** *To segment objects in remote sensing images referred to by natural-language descriptions using multiscale spatial guidance.* **Tools:** Multiscale Feature Fusion, Transformer, Vision-Language Fusion, Deep Learning Toolbox **Software:** MATLAB	**DL**
4	**Structure-Aware and Alignment-Optimized Remote Sensing Image Segmentation** **Objective:** *To improve boundary accuracy in remote sensing segmentation by incorporating structural awareness and feature alignment.* **Tools:** CNN, Structure-Aware Loss, Feature Alignment Module, Deep Learning Toolbox **Software:** MATLAB	**DL**
5	**ARTEN: An Agricultural Residual Texture Enhancement Network for Clarity-Aware Image Enhancement and Restoration** **Objective:** *To enhance and restore fine texture detail in agricultural images for clearer crop and field analysis.* **Tools:** Residual Network, Texture Enhancement Module, Deep Learning Toolbox **Software:** MATLAB	**DL**
6	**Development of Optimized Adaptive Multiscale Retinex Deep Learning Model for Image Enhancement** **Objective:** *To enhance low-quality images by combining multiscale Retinex theory with an optimized deep learning model.* **Tools:** Multiscale Retinex, CNN, Optimization Algorithm, Image Processing Toolbox **Software:** MATLAB	**DL**
7	**LECY-Net: Joint Low-Light Image Enhancement and Classification Y-Net**	**DL**

S.No	Title / Objective / Tools	Domain
	Objective: *To jointly enhance low-light images and classify their content using a shared Y-shaped network.* **Tools:** Y-Net Architecture, CNN, Multi-Task Learning, Deep Learning Toolbox **Software:** MATLAB	
8	**Enhancement of Satellite Images Using Contrast-Limited Adaptive Histogram Equalization With Hybrid Grey Wolf and Particle Swarm Optimization** **Objective:** *To improve satellite image contrast using CLAHE whose parameters are tuned by a hybrid Grey Wolf-Particle Swarm optimizer.* **Tools:** CLAHE, Grey Wolf Optimizer, Particle Swarm Optimization, Image Processing Toolbox **Software:** MATLAB	**AI**
9	**SFS-Net: A Method for Medical Image Segmentation Based on Shallow Feature Supplementation and Enhancement** **Objective:** *To improve medical image segmentation accuracy by supplementing deep features with shallow feature information.* **Tools:** Encoder-Decoder Network, Feature Supplementation Module, Deep Learning Toolbox **Software:** MATLAB	**DL**
10	**Channeling Fairness: Class Imbalance-Aware Skin Disease Recognition via Fair Channel Enhancement Module** **Objective:** *To reduce class-imbalance bias in skin disease recognition using a fairness-aware channel enhancement module.* **Tools:** CNN, Channel Attention, Class-Balancing Module, Deep Learning Toolbox **Software:** MATLAB	**DL**
11	**SOGKD-Lite: Lightweight Semantic Object-Guided Network for Efficient Low-Light Image Enhancement via Knowledge Distillation** **Objective:** *To achieve efficient low-light image enhancement on resource-constrained devices using semantic guidance and knowledge distillation.* **Tools:** Knowledge Distillation, Lightweight CNN, Semantic Guidance Module, Deep Learning Toolbox **Software:** MATLAB	**DL**
12	**A Recursive Deformable Mamba Pyramid Network With Multi-Objective Constraints and Spatial-Aware Attention Enhancement for Unimodal and Multimodal Brain Image Registration** **Objective:** *To register unimodal and multimodal brain images accurately using a deformable Mamba-based pyramid network with spatial attention.* **Tools:** Mamba Architecture, Deformable Convolution, Spatial Attention, Deep Learning Toolbox **Software:** MATLAB	**DL**
13	**Enhancing Low-Visibility Images for Operational Environments: Self-Supervised Learning Under Physical Model Guidance** **Objective:** *To restore visibility in degraded images for operational use through self-supervised learning guided by a physical imaging model.* **Tools:** Self-Supervised Learning, Physical Imaging Model, CNN, Deep Learning Toolbox **Software:** MATLAB	**DL**
14	**Quantifying Resilience of CNN-Based Brain Tumor Classification Under FGSM, PGD, and BIM Attacks**	**DL**

S.No	Title / Objective / Tools	Domain
	Objective: *To evaluate the robustness of CNN-based brain tumor classifiers against FGSM, PGD, and BIM adversarial attacks.* **Tools:** CNN, FGSM, PGD, BIM, Deep Learning Toolbox **Software:** MATLAB	
15	**A Bayesian Backed DeepLabV3+ Customized Hybrid-Depth Framework for Brain Tumor Segmentation and Classification** **Objective:** *To segment and classify brain tumors using a Bayesian-optimized hybrid-depth DeepLabV3+ framework.* **Tools:** DeepLabV3+, Bayesian Optimization, Semantic Segmentation, Deep Learning Toolbox **Software:** MATLAB	**DL**
16	**Quantum Kernel-Driven Hybrid Neural Network for Brain Tumor Classification** **Objective:** *To classify brain tumors using a hybrid neural network that leverages quantum kernel methods for improved feature separability.* **Tools:** Quantum Kernel Methods, Hybrid Neural Network, Deep Learning Toolbox **Software:** MATLAB	**DL**
17	**Optimizing Neural Networks for Brain Tumor Detection in MR Images Using Evolutionary Computing** **Objective:** *To improve brain tumor detection accuracy in MR images by optimizing network architecture and parameters via evolutionary computing.* **Tools:** Genetic Algorithm, Neural Architecture Search, CNN, Global Optimization Toolbox **Software:** MATLAB	**DL**
18	**SIRE-ST: A Swin Transformer-Based Cascaded Model for Urban Rainfall Estimation in Complex Environments** **Objective:** *To estimate urban rainfall intensity from radar/satellite imagery using a cascaded Swin Transformer model.* **Tools:** Swin Transformer, Cascaded Network, Deep Learning Toolbox **Software:** MATLAB	**DL**
19	**Development of Optimized Adaptive Multiscale Retinex Deep Learning Model for Image Enhancement** **Objective:** *To enhance low-quality images by combining multiscale Retinex theory with an optimized deep learning model.* **Tools:** Multiscale Retinex, CNN, Optimization Algorithm, Image Processing Toolbox **Software:** MATLAB	**DL**
20	**Enhancement of Satellite Images Using Contrast-Limited Adaptive Histogram Equalization With Hybrid Grey Wolf and Particle Swarm Optimization** **Objective:** *To improve satellite image contrast using CLAHE whose parameters are tuned by a hybrid Grey Wolf-Particle Swarm optimizer.* **Tools:** CLAHE, Grey Wolf Optimizer, Particle Swarm Optimization, Image Processing Toolbox **Software:** MATLAB	**AI**
21	**Deep Learning-Based Echocardiography Wall Thickness Analysis for Heart Failure Detection** **Objective:** *To automatically measure heart wall thickness from echocardiogram images for early heart-failure detection.* **Tools:** CNN, Semantic Segmentation, Deep Learning Toolbox **Software:** MATLAB	**DL**

S.No	Title / Objective / Tools	Domain
22	**A Lightweight Single-Token CNN-Transformer Architecture for Robust Multi-Crop Plant Disease Classification** **Objective:** *To classify diseases across multiple crop types efficiently using a lightweight hybrid CNN-Transformer model.* **Tools:** CNN, Vision Transformer, Single-Token Attention, Deep Learning Toolbox **Software:** MATLAB	**DL**
23	**Data-Efficient Pomegranate Disease Classification Using MulTaSiCl-MulTeSiSt Framework** **Objective:** *To classify pomegranate diseases accurately with limited training data using a multi-task, multi-teacher learning framework.* **Tools:** Multi-Task Learning, Knowledge Distillation, CNN, Deep Learning Toolbox **Software:** MATLAB	**DL**
24	**TPFormer: Robust Wildfire Segmentation via Thermal Prior Integration and Dual-Decoder Supervision** **Objective:** *To segment wildfire regions robustly by integrating thermal image priors into a dual-decoder transformer network.* **Tools:** Transformer, Thermal Prior Fusion, Dual-Decoder Network, Deep Learning Toolbox **Software:** MATLAB	**DL**
25	**Early-Stage Multimodal Lung Cancer Detection Using Attention-Based Feature Fusion** **Objective:** *To detect lung cancer at an early stage by fusing multimodal imaging features using attention mechanisms.* **Tools:** Attention Mechanism, Multimodal Fusion, CNN, Deep Learning Toolbox **Software:** MATLAB	**DL**

Trendy Titles

S.No	Title / Objective / Tools	Domain
1	**AI-Synthesized Image Detection: Source Camera Fingerprinting to Discern the Authenticity of Digital Images** **Objective:** *To detect AI-generated (synthetic) images by analyzing source-camera fingerprint inconsistencies.* **Tools:** Camera Fingerprinting, CNN, Forensic Feature Analysis, Deep Learning Toolbox **Software:** MATLAB	**AI**
2	**BorB: A Novel Image Segmentation Technique for Improving Plant Disease Classification With Deep Learning Models** **Objective:** *To improve plant disease classification accuracy through a boundary-aware segmentation technique combined with deep learning.* **Tools:** Segmentation Network, CNN, Deep Learning Toolbox **Software:** MATLAB	**DL**
3	**Early Diagnosis of Alzheimer's Disease Using Adaptive Neuro K-Means Clustering Technique** **Objective:** *To diagnose Alzheimer's disease at an early stage using an adaptive neuro-fuzzy K-Means clustering technique on MRI data.* **Tools:** K-Means Clustering, Adaptive Neuro-Fuzzy System, Statistics and Machine Learning Toolbox	**ML**

S.No	Title / Objective / Tools	Domain
	Software: MATLAB	
4	**Optimized Brain Tumor Detection: A Dual-Module Approach for MRI Image Enhancement and Tumor Classification** **Objective:** *To detect and classify brain tumors through a two-stage pipeline of MRI enhancement followed by tumor classification.* **Tools:** Image Enhancement Module, CNN Classifier, Deep Learning Toolbox **Software:** MATLAB	**DL**
5	**Single Underwater Image Restoration Using Variational Framework Guided by Imaging Model With Noise** **Objective:** *To restore a single degraded underwater image by modeling the underwater imaging process within a variational optimization framework.* **Tools:** Variational Optimization, Underwater Imaging Model, Image Processing Toolbox **Software:** MATLAB	**Image Processing**
6	**Online Low-Light Sand-Dust Video Enhancement Using Adaptive Dynamic Brightness Correction and a Rolling Guidance Filter** **Objective:** *To enhance low-light sand-dust degraded video in real time using adaptive brightness correction and rolling guidance filtering.* **Tools:** Rolling Guidance Filter, Adaptive Brightness Correction, Image Processing Toolbox **Software:** MATLAB	**Image Processing**
7	**Lumbar Disease Classification Using an Involutional Neural Based VGG Nets (INVGG)** **Objective:** *To classify lumbar spine diseases from medical images using an involution-based variant of the VGG network.* **Tools:** Involutional Neural Network, VGG, Deep Learning Toolbox **Software:** MATLAB	**DL**
8	**Tomato Quality Classification Based on Transfer Learning Feature Extraction and Machine Learning Algorithm Classifiers** **Objective:** *To classify tomato quality grades by extracting deep features via transfer learning and classifying with machine learning algorithms.* **Tools:** Transfer Learning, SVM/Random Forest, Deep Learning Toolbox, Statistics and Machine Learning Toolbox **Software:** MATLAB	**ML**
9	**A Novel Framework for Vehicle Detection and Tracking in Night Ware Surveillance Systems** **Objective:** *To detect and track vehicles reliably in low-light night-time surveillance video.* **Tools:** Object Detector (YOLO-type), Multi-Object Tracker, Computer Vision Toolbox **Software:** MATLAB	**DL**
10	**Classification of Oral Cancer Into Pre-Cancerous Stages From White Light Images Using LightGBM Algorithm** **Objective:** *To classify oral lesions into pre-cancerous stages from white-light images using gradient boosting.* **Tools:** LightGBM, Feature Extraction, Statistics and Machine Learning Toolbox **Software:** MATLAB	**ML**
11	**Heart Disease Classification From Echocardiogram Images Using Deep Learning**	**DL**

S.No	Title / Objective / Tools	Domain
	Objective: *To classify cardiac conditions from echocardiogram images using a deep learning classifier.* **Tools:** CNN, Deep Learning Toolbox **Software:** MATLAB	
12	**Automated Tool Support for Glaucoma Identification With Explainability Using Fundus Images** **Objective:** *To detect glaucoma from fundus images with an explainable deep-learning tool that highlights decision regions.* **Tools:** CNN, Grad-CAM / Explainable AI, Deep Learning Toolbox **Software:** MATLAB	**DL**
13	**A Novel Intensity-Corrected Blue Channel Compensation and Edge-Preserving Contrast Enhancement Using Laplace Filter and Sigmoid Function for Sand-Dust Image Enhancement** **Objective:** *To enhance sand-dust degraded images through intensity-corrected blue-channel compensation and edge-preserving contrast enhancement.* **Tools:** Laplace Filter, Sigmoid Function, Image Processing Toolbox **Software:** MATLAB	**Image Processing**
14	**Contrast Limited Adaptive Local Histogram Equalization Method for Poor Contrast Image Enhancement** **Objective:** *To enhance poor-contrast images using an adaptive local contrast-limited histogram equalization method.* **Tools:** CLAHE, Histogram Equalization, Image Processing Toolbox **Software:** MATLAB	**Image Processing**
15	**Hybrid Image Processing and Deep Learning Framework for Automated Coronary Artery Disease Classification Using Echocardiogram and Angiography** **Objective:** *To classify coronary artery disease by combining classical image processing with deep learning on echocardiogram and angiography images.* **Tools:** Image Processing Toolbox, CNN, Deep Learning Toolbox **Software:** MATLAB	**DL**
16	**Early Detection of Fungal Diseases in Crops** **Objective:** *To detect fungal infections in crop leaves at an early stage using a deep learning classifier.* **Tools:** CNN, Deep Learning Toolbox **Software:** MATLAB	**DL**
17	**DeepSeqCoco: A Robust Mobile Friendly Deep Learning Model for Detection of Diseases in Cocos Nucifera** **Objective:** *To detect diseases in coconut palms using a lightweight, mobile-deployable deep learning model.* **Tools:** Lightweight CNN, Model Compression, Deep Learning Toolbox **Software:** MATLAB	**DL**
18	**Low Contrast Enhancement Algorithm for Color Image Using Pythagorean Fuzzy Sets With a Fusion of CLAHE and BPDHE Methods** **Objective:** *To enhance low-contrast colour images using a fuzzy-set-based fusion of CLAHE and BPDHE methods.* **Tools:** Pythagorean Fuzzy Sets, CLAHE, BPDHE, Fuzzy Logic Toolbox **Software:** MATLAB	**Image Processing**

S.No	Title / Objective / Tools	Domain
19	**Masked Vascular Structure Segmentation and Completion in Retinal Images** **Objective:** *To segment and complete occluded vascular structures in retinal fundus images.* **Tools:** Segmentation Network, Inpainting Module, Deep Learning Toolbox **Software:** MATLAB	**DL**
20	**Enhancing Hybrid Classification for Plant Diseases with Deep Feature Selection Based on Analytical Entropy and Statistical Method** **Objective:** *To classify plant diseases using deep features selected via analytical entropy and statistical criteria.* **Tools:** Feature Selection, Entropy Analysis, Statistics and Machine Learning Toolbox **Software:** MATLAB	**ML**
21	**Bone Age Estimation from Hand X-ray Images** **Objective:** *To estimate skeletal bone age automatically from hand X-ray images.* **Tools:** CNN, Regression Network, Deep Learning Toolbox **Software:** MATLAB	**DL**
22	**Artificial Intelligence Techniques for Landslides Prediction Using Satellite Imagery** **Objective:** *To predict landslide-prone regions from satellite imagery using AI-based analysis.* **Tools:** CNN, GIS Feature Analysis, Deep Learning Toolbox **Software:** MATLAB	**AI**
23	**Detection of Various Lung Diseases Using a Lightweight CNN Architecture** **Objective:** *To detect multiple lung diseases from chest images using a computationally lightweight CNN architecture.* **Tools:** Lightweight CNN, Deep Learning Toolbox **Software:** MATLAB	**DL**
24	**Underwater Image Enhancement via Weighted Wavelet Visual Perception Fusion** **Objective:** *To enhance underwater images by fusing wavelet-decomposed components weighted according to human visual perception.* **Tools:** Wavelet Transform, Perceptual Fusion, Image Processing Toolbox, Wavelet Toolbox **Software:** MATLAB	**Image Processing**
25	**Classification of Psoriasis Using VisionTransformer: A Deep Learning-Based Approach** **Objective:** *To classify psoriasis skin lesions using a Vision Transformer-based deep learning approach.* **Tools:** Vision Transformer, Deep Learning Toolbox **Software:** MATLAB	**DL**

Standard Titles

S.No	Title / Objective / Tools	Domain
1	**Performance Enhancement of Skin Cancer Classification Using Computer Vision** **Objective:** *To improve skin cancer classification performance using computer-vision-based feature extraction and classification.*	**DL**

S.No	Title / Objective / Tools	Domain
	Tools: CNN, Computer Vision Toolbox **Software:** MATLAB	
2	**Predicting Coronary Heart Disease Using an Improved LightGBM Model: Performance Analysis and Comparison** **Objective:** *To predict coronary heart disease risk from clinical data using an improved LightGBM model.* **Tools:** LightGBM, Statistics and Machine Learning Toolbox **Software:** MATLAB	**ML**
3	**Internet of Things and Deep Learning Enabled Diabetic Retinopathy Diagnosis Using Retinal Fundus Images** **Objective:** *To diagnose diabetic retinopathy severity from retinal fundus images using an IoT-integrated deep learning system.* **Tools:** CNN, IoT Data Pipeline, Deep Learning Toolbox **Software:** MATLAB	**DL**
4	**Fish Disease Detection Using Image Based Machine Learning Technique in Aquaculture** **Objective:** *To detect fish diseases in aquaculture using image-based machine learning classification.* **Tools:** Feature Extraction, SVM/KNN, Statistics and Machine Learning Toolbox **Software:** MATLAB	**ML**
5	**Multi-Class Classification of Plant Leaf Diseases Using Feature Fusion of Deep Convolutional Neural Network and Local Binary Pattern** **Objective:** *To classify multiple plant leaf diseases by fusing deep CNN features with Local Binary Pattern texture features.* **Tools:** CNN, Local Binary Pattern, Deep Learning Toolbox **Software:** MATLAB	**DL**
6	**Poultry Disease Early Detection Methods Using Deep Learning Technology** **Objective:** *To detect poultry diseases at an early stage from image data using a deep learning classifier.* **Tools:** CNN, Deep Learning Toolbox **Software:** MATLAB	**DL**

SIGNAL PROCESSING

Latest Titles

S.No	Title / Objective / Tools	Domain
1	**Signal Processing Method to Remove Electromagnetic Noise Superimposed on AM Radio in Moving Electric Vehicles** **Objective:** *To remove electromagnetic interference from AM radio signals caused by electric-vehicle motor noise.* **Tools:** Adaptive Filtering, Signal Processing Toolbox **Software:** MATLAB	**Signal Processing**
2	**Short-Time Fourier Transform-Based Signal Recovery for Modulo Analog-to-Digital Converters** **Objective:** *To recover original signals from modulo (folded) ADC output using Short-Time Fourier Transform-based unwrapping.* **Tools:** Short-Time Fourier Transform, Signal Processing Toolbox **Software:** MATLAB	**Signal Processing**
3	**Robustness of Lightweight Neural Networks for EEG-Based Emotion Recognition** **Objective:** *To evaluate and improve the robustness of lightweight neural networks for classifying emotions from EEG signals.* **Tools:** Lightweight CNN/RNN, EEG Feature Extraction, Deep Learning Toolbox **Software:** MATLAB	**DL**
4	**Relay Performance in D2D Communications Overlaying Multi-Antenna Cellular Networks** **Objective:** *To analyze relay-assisted device-to-device communication performance in multi-antenna cellular network overlays.* **Tools:** Relay Modeling, MIMO Channel Model, Communications Toolbox **Software:** MATLAB	**Communication**
5	**Perceptive Artificial Hearing Module for User Interfaces: Speaker Identification, Emotion Classification, and Spatial Localization** **Objective:** *To build an artificial hearing module that jointly performs speaker identification, emotion classification, and spatial sound localization.* **Tools:** CNN/RNN, Audio Feature Extraction, Deep Learning Toolbox, Audio Toolbox **Software:** MATLAB	**DL**
6	**Lightweight AI-Driven Adaptive Resource Allocation for Energy-Efficient Integrated Sensing and Communication in 6G-IoT Networks** **Objective:** *To allocate network resources efficiently for integrated sensing and communication in 6G-IoT networks using a lightweight AI model.* **Tools:** Reinforcement Learning, Resource Allocation Optimization, Deep Learning Toolbox **Software:** MATLAB	**AI**
7	**Joint Communication and Sensing Beamforming Design Under Multi-Antenna System** **Objective:** *To design joint beamforming vectors that simultaneously optimize communication and sensing performance in a multi-antenna system.* **Tools:** Beamforming Design, MIMO, Phased Array System Toolbox **Software:** MATLAB	**Communication**

S.No	Title / Objective / Tools	Domain
8	**IRS-Aided MIMO Spectrum Sensing via Alternating Phase Optimizatio** **Objective:** *To improve spectrum-sensing accuracy in MIMO systems assisted by an intelligent reflecting surface using alternating phase optimization.* **Tools:** IRS Phase Optimization, MIMO, Communications Toolbox **Software:** MATLAB	**Communication**
9	**Emotion Recognition From EEG Signals Using a Hybrid Deep Learning Approach** **Objective:** *To classify human emotional states from EEG signals using a hybrid deep learning architecture.* **Tools:** CNN-LSTM Hybrid, EEG Feature Extraction, Deep Learning Toolbox **Software:** MATLAB	**DL**
10	**Direction of Arrival Estimation for the Coexistence of Uncorrelated and Coherent Signals via Rotation Spatial Differencing Method** **Objective:** *To estimate the direction of arrival of a mixture of uncorrelated and coherent signals using a rotational spatial differencing technique.* **Tools:** Spatial Differencing, Array Signal Processing, Phased Array System Toolbox **Software:** MATLAB	**Signal Processing**

Trendy Titles

S.No	Title / Objective / Tools	Domain
1	**Contactless Simulation Model for Human Vital Monitoring Using UWB Radar** **Objective:** *To simulate contactless monitoring of human vital signs (heart rate, respiration) using ultra-wideband radar signals.* **Tools:** UWB Radar Signal Model, Signal Processing Toolbox **Software:** MATLAB	**Signal Processing**
2	**Lightweight and High Accurate RR Interval Compensation for Signals from Wearable ECG Sensors** **Objective:** *To compensate for missing or erroneous RR intervals in ECG signals from wearable sensors with a lightweight, accurate algorithm.* **Tools:** ECG Signal Processing, Signal Processing Toolbox **Software:** MATLAB	**Signal Processing**
3	**A Novel ECG Signal Quality Index Method Based on Skewness-MODWT Analysis.** **Objective:** *To assess ECG signal quality using a skewness-based metric computed from Maximal Overlap Discrete Wavelet Transform coefficients.* **Tools:** MODWT, Statistical Skewness, Wavelet Toolbox **Software:** MATLAB	**Signal Processing**
4	**A Morphology-Preserving Algorithm for Denoising of EMG-Contaminated ECG Signals** **Objective:** *To remove EMG noise from ECG recordings while preserving the clinically important ECG waveform morphology.* **Tools:** Adaptive Denoising Filter, Signal Processing Toolbox **Software:** MATLAB	**Signal Processing**

S.No	Title / Objective / Tools	Domain
5	**ENHANCING SPEECH FOR HEARING IMPAIRED AIDS THROUGH CNN** **Objective:** *To enhance speech intelligibility for hearing-aid devices using a CNN-based speech enhancement model.* **Tools:** CNN, Speech Enhancement, Deep Learning Toolbox, Audio Toolbox **Software:** MATLAB	**DL**
6	**Efficient Nearly Piecewise Continuous Signal Basis Expansion by Precision Calculation** **Objective:** *To represent piecewise continuous signals efficiently using a precision-optimized basis expansion technique.* **Tools:** Basis Function Expansion, Signal Processing Toolbox **Software:** MATLAB	**Signal Processing**
7	**A Resource-Efficient Time-Domain-Based Algorithm to Estimate Respiration Rate from Single-Lead ECG Signal** **Objective:** *To estimate respiration rate directly from a single-lead ECG signal using a resource-efficient time-domain algorithm.* **Tools:** Time-Domain Analysis, Signal Processing Toolbox **Software:** MATLAB	**Signal Processing**
8	**A Deep and Interpretable Learning Approach for Long-Term ECG Clinical Noise Classification** **Objective:** *To classify clinical noise types in long-term ECG recordings using an interpretable deep learning model.* **Tools:** CNN/RNN, Explainable AI, Deep Learning Toolbox **Software:** MATLAB	**DL**
9	**Multistage Cascaded LMS Adaptive FIR Filter and its Application to Multiple Artifacts Removal from ECG** **Objective:** *To remove multiple artifact types from ECG signals using a multistage cascaded LMS adaptive FIR filter.* **Tools:** LMS Adaptive Filter, FIR Filter Design, Signal Processing Toolbox, DSP System Toolbox **Software:** MATLAB	**Signal Processing**

COMMUNICATIONS

Latest Titles

S.No	Title / Objective / Tools	Domain
1	**6G SDVN: UAV-Assisted VANETs for AI-Enabled Controller Selection and Heterogeneous Multi-Band Connectivity** **Objective:** *To design a software-defined vehicular network for 6G UAV-assisted VANETs with AI-based controller selection and multi-band connectivity.* **Tools:** SDN Architecture, Reinforcement Learning, Communications Toolbox **Software:** MATLAB	**AI**
2	**Improved NOMA-Based Two-Way Relaying Using Golden Code Super-Symbols** **Objective:** *To improve two-way relay NOMA system performance using Golden-Code-based super-symbol transmission.* **Tools:** NOMA, Golden Code, Relay Modeling, Communications Toolbox **Software:** MATLAB	**Communication**
3	**Digital Twin-Assisted Explainable AI for Robust Beam Prediction in mmWave MIMO Systems** **Objective:** *To predict optimal beams in mmWave MIMO systems robustly using an explainable AI model supported by a digital twin.* **Tools:** Digital Twin Simulation, Explainable AI, Deep Learning Toolbox, 5G Toolbox **Software:** MATLAB	**AI**
4	**Adaptive Ground User Pairing in Flying-STAR-RIS-Assisted AAV mmWave CF mMIMO Satellite-RSMA Networks** **Objective:** *To pair ground users adaptively in a complex flying-RIS-assisted satellite-terrestrial mmWave network using RSMA.* **Tools:** STAR-RIS, RSMA, User Pairing Algorithm, Communications Toolbox **Software:** MATLAB	**Communication**
5	**Low-Complexity Heuristic Optimization of RIS Orientation for V2V Visible Light Communication at Urban Intersections** **Objective:** *To optimize RIS panel orientation to maximize visible-light communication link quality for V2V links at intersections.* **Tools:** RIS Optimization, Visible Light Communication, Heuristic Optimization **Software:** MATLAB	**Communication**
6	**MCACOF: Multi-Criteria Adaptive Clustering and Optimization Framework to Improve WSN Performance** **Objective:** *To improve wireless sensor network performance using a multi-criteria adaptive clustering and optimization framework.* **Tools:** Clustering Algorithm, Multi-Criteria Optimization, Communications Toolbox **Software:** MATLAB	**Communication**
7	**Orbit Aware-Based Satellite Selection Method for Reducing Handover Frequency in LEO Satellite Networks** **Objective:** *To reduce handover frequency in LEO satellite networks by selecting serving satellites based on orbital awareness.* **Tools:** Satellite Selection Algorithm, Satellite Communications Toolbox **Software:** MATLAB	**Communication**

S.No	Title / Objective / Tools	Domain
8	**Dynamic Beam Hopping Scheduling and Bandwidth Allocation Algorithms for Multi-Beam Satellite System** **Objective:** *To schedule beam hopping and allocate bandwidth dynamically to maximize throughput in multi-beam satellite systems.* **Tools:** Beam Hopping Scheduling, Resource Allocation, Satellite Communications Toolbox **Software:** MATLAB	**Communication**
9	**Joint Beamforming and Reflection Design for Maximizing Energy Efficiency of RIS-Assisted Secure ISAC System** **Objective:** *To maximize energy efficiency of a secure integrated sensing and communication system through joint beamforming and RIS reflection design.* **Tools:** RIS Optimization, Beamforming, ISAC, Communications Toolbox **Software:** MATLAB	**Communication**
10	**RIoT Digital Twin: Modeling, Deployment, and Optimization of Reconfigurable IoT System With Optical–Radio Wireless Integration** **Objective:** *To model, deploy, and optimize a reconfigurable IoT system integrating optical and radio wireless links via a digital twin.* **Tools:** Digital Twin Simulation, Hybrid Optical-RF Link Model, Communications Toolbox **Software:** MATLAB	**Communication**
11	**Digital Twin and Transformer-Based Learning for Secure and Energy-Efficient Active RIS-Assisted Communications** **Objective:** *To achieve secure, energy-efficient active RIS-assisted communication using a Transformer-based learning model within a digital twin framework.* **Tools:** Transformer Network, Digital Twin, Deep Learning Toolbox **Software:** MATLAB	**DL**
12	**Digital Twin-Driven Cross-Layer Orchestration Using Multi-Agent Reinforcement Learning for 6G Drone-NTN Networks** **Objective:** *To orchestrate cross-layer network functions in 6G drone-based non-terrestrial networks using multi-agent reinforcement learning.* **Tools:** Multi-Agent Reinforcement Learning, Digital Twin, Reinforcement Learning Toolbox **Software:** MATLAB	**AI**
13	**Full Space Coverage Enhancement for Cellular Communication Systems via 3D-IRS: 2W Deployment Toward 6G Application** **Objective:** *To enhance 3D spatial coverage of cellular communication systems using a 3D intelligent reflecting surface deployment.* **Tools:** 3D-IRS Design, Coverage Optimization, Communications Toolbox **Software:** MATLAB	**Communication**
14	**A Runtime Safety Copilot for AI-Native O-RAN: Predictive Verification and Fail-Safe Enforcement in Near-RT RIC Control Loops** **Objective:** *To provide predictive verification and fail-safe enforcement for AI-driven control loops in Open RAN networks.* **Tools:** AI Verification Module, O-RAN Control Loop, Deep Learning Toolbox **Software:** MATLAB	**AI**
15	**Edge-Deployed AI Optimizing Fractional Frequency Reuse in Multibeam Satellite System** **Objective:** *To optimize fractional frequency reuse patterns in multibeam satellite systems using edge-deployed AI.*	**AI**

S.No	Title / Objective / Tools	Domain
	Tools: Edge AI, Frequency Reuse Optimization, Deep Learning Toolbox **Software:** MATLAB	
16	**DDPG Optimization for Hybrid RIS-Assisted Secure Multi-User-MISO Networks** **Objective:** *To optimize secure transmission in a hybrid RIS-assisted multi-user MISO network using a Deep Deterministic Policy Gradient reinforcement learning approach.* **Tools:** DDPG, Reinforcement Learning Toolbox, RIS Optimization **Software:** MATLAB	**AI**
17	**On the Performance of Multi-RIS-Assisted Wireless Communication Systems With Phase Errors** **Objective:** *To analyze the performance degradation of multi-RIS-assisted wireless communication systems under practical phase errors.* **Tools:** RIS Channel Model, Performance Analysis, Communications Toolbox **Software:** MATLAB	**Communication**
18	**Sum Rate Optimization via Joint Beamforming in RIS-Assisted ISAC System: A Manifold-Based Approach** **Objective:** *To maximize the sum rate of a RIS-assisted ISAC system using a manifold-optimization-based joint beamforming approach.* **Tools:** Manifold Optimization, Beamforming, Communications Toolbox **Software:** MATLAB	**Communication**
19	**Joint Precoding and Beamforming for Active Beyond-Diagonal RIS-Assisted Multi-User DFRC** **Objective:** *To jointly design precoding and beamforming for an active beyond-diagonal RIS-assisted dual-function radar-communication system.* **Tools:** Beyond-Diagonal RIS, Precoding Design, Communications Toolbox **Software:** MATLAB	**Communication**
20	**Joint Beamforming and Reflection Design for Maximizing Energy Efficiency of RIS-Assisted Secure ISAC System** **Objective:** *To maximize energy efficiency of a secure integrated sensing and communication system through joint beamforming and RIS reflection design.* **Tools:** RIS Optimization, Beamforming, ISAC, Communications Toolbox **Software:** MATLAB	**Communication**

Trendy Titles

S.No	Title / Objective / Tools	Domain
1	**Deep Reinforcement Learning-Driven Secure ISAC Optimization Using STAR-RIS in 6G Networks** **Objective:** *To secure and optimize ISAC performance in 6G networks assisted by STAR-RIS using deep reinforcement learning.* **Tools:** Deep Reinforcement Learning, STAR-RIS, Reinforcement Learning Toolbox **Software:** MATLAB	**AI**
2	**Secure THz Communication in 6G: A Two-Stage DRL Approach for IRS-Assisted NOMA**	**AI**

S.No	Title / Objective / Tools	Domain
	Objective: *To secure terahertz-band 6G communications in an IRS-assisted NOMA network using a two-stage deep reinforcement learning strategy.* **Tools:** Deep Reinforcement Learning, IRS, NOMA, Reinforcement Learning Toolbox **Software:** MATLAB	
3	**Performance Enhancement of V2V Communication by QC-LDPC Code and NOMA-UM-MIMO Techniques** **Objective:** *To improve vehicle-to-vehicle link reliability using QC-LDPC channel coding combined with NOMA and unified massive MIMO techniques.* **Tools:** QC-LDPC Coding, NOMA, MIMO, Communications Toolbox **Software:** MATLAB	**Communication**
4	**Enhancing Security and Privacy in 5G Device-to Device Communication: A Secure Gale-Shapley Algorithm Approach** **Objective:** *To enhance security and privacy of 5G device-to-device pairing using a secure Gale-Shapley matching algorithm.* **Tools:** Gale-Shapley Matching Algorithm, Security Protocol Design, Communications Toolbox **Software:** MATLAB	**Communication**
5	**Bandwidth Allocation and Power Control Optimization for Multi-UAVs Enabled 6G Network** **Objective:** *To jointly optimize bandwidth allocation and transmit power control for multiple UAVs operating in a 6G network.* **Tools:** Resource Allocation Optimization, Power Control, Communications Toolbox **Software:** MATLAB	**Communication**
6	**Car-to-Car Communication Using RF Cognitive Radio With VLC Common Control Channel** **Objective:** *To enable car-to-car communication using cognitive radio for data along with a visible-light common control channel.* **Tools:** Cognitive Radio, Visible Light Communication, Communications Toolbox **Software:** MATLAB	**Communication**
7	**Optimized Cluster Routing Protocol With Energy-Sustainable Mechanisms for Wireless Sensor Networks** **Objective:** *To extend wireless sensor network lifetime using an energy-sustainable, optimized clustering and routing protocol.* **Tools:** Clustering Algorithm, Routing Optimization, Communications Toolbox **Software:** MATLAB	**Communication**
8	**Millimeter-Wave Massive MU-MIMO Performance Analysis for Private Underground Mine Communications** **Objective:** *To analyze the performance of millimeter-wave massive multi-user MIMO for private communication networks in underground mines.* **Tools:** Massive MIMO, mmWave Channel Model, Communications Toolbox **Software:** MATLAB	**Communication**
9	**A Chaotic Reptile Search Algorithm for Energy Consumption Optimization in Wireless Sensor Networks** **Objective:** *To minimize energy consumption in wireless sensor networks using a chaotic variant of the Reptile Search metaheuristic algorithm.* **Tools:** Chaotic Reptile Search Algorithm, Metaheuristic Optimization, Global Optimization Toolbox	**AI**

S.No	Title / Objective / Tools	Domain
	Software: MATLAB	
10	**Adaptive Detection Algorithm With Dynamic Dual Threshold for Low Probability of Intercept Radar Signals and Its FPGA Implementation** **Objective:** *To detect low-probability-of-intercept radar signals using a dynamic dual-threshold algorithm implementable on FPGA.* **Tools:** Adaptive Thresholding, Radar Signal Processing, Signal Processing Toolbox, HDL Coder **Software:** MATLAB	**Signal Processing**
11	**Performance Analysis of Hybrid Beamforming Precoders for Multiuser Millimeter Wave NOMA Systems** **Objective:** *To analyze and design hybrid beamforming precoders for multiuser millimeter-wave NOMA systems.* **Tools:** Hybrid Beamforming, NOMA, Phased Array System Toolbox **Software:** MATLAB	**Communication**

Standard Titles

S.No	Title / Objective / Tools	Domain
1	**EEG Signal Analysis for Relaxation Detection** **Objective:** *To detect a relaxed mental state from EEG signal features.* **Tools:** EEG Feature Extraction, Signal Processing Toolbox **Software:** MATLAB	**Signal Processing**
2	**Improving power consumption in IoT devices through neural network-based decision making** **Objective:** *To reduce IoT device power consumption using a neural-network-based adaptive decision-making scheme.* **Tools:** Neural Network, Power Management Algorithm, Deep Learning Toolbox **Software:** MATLAB	**DL**
3	**An Analytical Model of a System with Compression and Queuing for Selected Traffic Flows** **Objective:** *To model and analyze a communication system that applies data compression and queuing to selected traffic flows.* **Tools:** Queuing Theory, Analytical Modeling, Communications Toolbox **Software:** MATLAB	**Communication**
4	**Performance Analysis of OFDM and OFDMMIMO Systems under Fading Channels** **Objective:** *To evaluate the performance of OFDM and OFDM-MIMO systems under various fading channel conditions.* **Tools:** OFDM, MIMO, Fading Channel Model, Communications Toolbox **Software:** MATLAB	**Communication**
5	**Distributed Distortion Aware Beamforming Designs for Cell Free mMIMO Systems** **Objective:** *To design distributed beamforming that accounts for hardware distortion in cell-free massive MIMO systems.* **Tools:** Cell-Free Massive MIMO, Beamforming Design, Communications Toolbox	**Communication**

S.No	Title / Objective / Tools	Domain
	Software: MATLAB	
6	**Optimizing Routing with ACO and Energy Efficient Localizing with EE LEACH Algorithm** **Objective:** *To optimize routing and energy-efficient clustering in wireless networks using Ant Colony Optimization combined with EE-LEACH.* **Tools:** Ant Colony Optimization, LEACH Protocol, Global Optimization Toolbox **Software:** MATLAB	**AI**
7	**AI-driven intrusion detection system for cloud security** **Objective:** *To detect network intrusions in a cloud environment using an AI-based detection model.* **Tools:** Machine Learning Classifier, Intrusion Detection, Statistics and Machine Learning Toolbox **Software:** MATLAB	**AI**
8	**AI-Driven Predictions for Channel State Information in next generation networks** **Objective:** *To predict channel state information for next-generation wireless networks using an AI-based prediction model.* **Tools:** Neural Network Predictor, Channel Estimation, Deep Learning Toolbox **Software:** MATLAB	**AI**
9	**A Hybrid Fault-Tolerant Routing based on Gaussian Network for Wireless Sensor Network** **Objective:** *To achieve fault-tolerant routing in wireless sensor networks using a Gaussian-network-based hybrid routing scheme.* **Tools:** Gaussian Network Model, Fault-Tolerant Routing, Communications Toolbox **Software:** MATLAB	**Communication**
10	**Cyber-Resilient Microgrid: Real-time Simulation, Attack Emulation & Secure Monitoring** **Objective:** *To build a cyber-resilient microgrid testbed with real-time simulation, cyberattack emulation, and secure monitoring.* **Tools:** Real-Time Simulation, Cyberattack Emulation, Simulink **Software:** MATLAB	**AI**

ANTENNA

Titles

S.No	Title / Objective / Tools	Domain
1	**Microstrip Patch Antenna Design for 5G and Beyond Wireless Communication Systems** **Objective:** *To design a microstrip patch antenna suitable for 5G and future wireless communication frequency bands.* **Tools:** Microstrip Patch Design, Antenna Toolbox. **Software:** HFSS or CST	**Antenna Design**
2	**Compact Broadband Linear Polarized Filtering Patch Antenna With Multi-Element Coupling Structure** **Objective:** *To design a compact broadband, linearly polarized filtering patch antenna using a multi-element coupling structure.* **Tools:** Filtering Antenna, Multi-Element Coupling, Antenna Toolbox **Software:** HFSS or CST	**Antenna Design**
3	**Dual-Polarized Microstrip Patch Antenna with Enhanced Bandwidth and Gain Using DGS** **Objective:** *To enhance the bandwidth and gain of a dual-polarized microstrip patch antenna using a defected ground structure.* **Tools:** Defected Ground Structure (DGS), Dual Polarization, Antenna Toolbox **Software:** HFSS or CST	**Antenna Design**
4	**A Metamaterial Loaded High Gain Low Profile Microstrip Antenna for X-Band Applications** **Objective:** *To achieve high gain in a low-profile microstrip antenna for X-band applications using metamaterial loading.* **Tools:** Metamaterial Unit Cells, Antenna Toolbox **Software:** HFSS or CST	**Antenna Design**
5	**Multi Band Miniaturized 2 × 2 MIMO Antenna for Sub-6-GHz Applications** **Objective:** *To design a miniaturized multi-band 2×2 MIMO antenna array for sub-6 GHz wireless applications.* **Tools:** MIMO Antenna Array, Miniaturization Techniques, Antenna Toolbox **Software:** HFSS or CST	**Antenna Design**
6	**Compact High-Frequency-Ratio Tri-Band Antenna for Sub-6 GHz and mmWave Co-Integration** **Objective:** *To co-integrate sub-6 GHz and mmWave bands within a single compact tri-band antenna having a high frequency ratio.* **Tools:** Tri-Band Design, Sub-6GHz/mmWave Co-Integration, Antenna Toolbox **Software:** HFSS or CST	**Antenna Design**
7	**Improved Bandwidth of Microstrip Wide-Slot Antenna Using Gielis Curves** **Objective:** *To improve the impedance bandwidth of a wide-slot microstrip antenna by shaping the slot using Gielis superformula curves.* **Tools:** Gielis Curve Geometry, Wide-Slot Antenna, Antenna Toolbox **Software:** HFSS or CST	**Antenna Design**
8	**Planar Rectangular Microstrip Antenna for Partial Discharge Detection**	**Antenna Design**

S.No	Title / Objective / Tools	Domain
	Objective: *To detect partial discharge signals in electrical equipment using a planar rectangular microstrip sensing antenna.* **Tools:** Sensing Antenna, Partial Discharge Signal Detection **Software:** HFSS or CST	
9	**Optimization of a Compact Wearable LoRa Patch Antenna for Vital Sign Monitoring in WBAN Medical Applications using Machine Learning** **Objective:** *To optimize a compact wearable LoRa patch antenna for vital-sign monitoring in wireless body area networks using a machine learning model.* **Tools:** Wearable Antenna, LoRa, Machine Learning Optimization, Statistics and Machine Learning Toolbox **Software:** HFSS or CST	**ML**
10	**Design of defective ground plane modified microstrip patch antenna for ultra-wideband applications** **Objective:** *To achieve ultra-wideband operation in a microstrip patch antenna by modifying the ground plane with a defected structure.* **Tools:** Defected Ground Structure, UWB Antenna Design, Antenna Toolbox **Software:** HFSS or CST	**Antenna Design**
11	**Study of Microstrip Patch Antenna for Wireless Communication System** **Objective:** *To study and analyze the design parameters of a microstrip patch antenna for wireless communication systems.* **Tools:** Microstrip Patch Design, Antenna Toolbox **Software:** HFSS or CST	**Antenna Design**
12	**IoT application using a unique rectangular 2.4GHz microstrip patch antenna** **Objective:** *To design a rectangular microstrip patch antenna operating at 2.4 GHz for IoT applications.* **Tools:** Rectangular Patch Design, Antenna Toolbox **Software:** HFSS or CST	**Antenna Design**
13	**Single- and Dual-Band RF-Quasi-Reflectionless Planar Monopole Antennas and Their Application to Low-Reflection Antenna Arrays** **Objective:** *To design single- and dual-band quasi-reflectionless planar monopole antennas for use in low-reflection antenna arrays.* **Tools:** Quasi-Reflectionless Design, Monopole Antenna, Antenna Array **Software:** HFSS or CST	**Antenna Design**
14	**AI/ML-Assisted Performance Optimization of Miniaturized mm Wave 5G MIMO Slotted Antenna Arrays** **Objective:** *To optimize the performance of a miniaturized mmWave 5G MIMO slotted antenna array using AI/ML-assisted techniques.* **Tools:** Machine Learning Optimization, MIMO Antenna Array, Deep Learning Toolbox **Software:** HFSS or CST	**AI**
15	**Design of Dual-Band Microstrip Patch Antenna for Wireless Local Area Network Applications** **Objective:** *To design a dual-band microstrip patch antenna for wireless local area network applications.* **Tools:** Dual-Band Design, Antenna Toolbox **Software:** HFSS or CST	**Antenna Design**

S.No	Title / Objective / Tools	Domain
16	**Design and Implementation of Frequency Reconfigurable Antenna for Wi-Fi Applications** **Objective:** *To design and implement a frequency-reconfigurable antenna capable of switching bands for Wi-Fi applications.* **Tools:** Reconfigurable Antenna, PIN Diode Switching, Antenna Toolbox **Software:** HFSS or CST	**Antenna Design**
17	**Design and optimization of a compact microstrip BPF for wireless communication systems based on open-loop rectangular resonators** **Objective:** *To design and optimize a compact microstrip bandpass filter for wireless systems using open-loop rectangular resonators.* **Tools:** Open-Loop Resonator, Bandpass Filter Design **Software:** HFSS or CST	**Antenna Design**
18	**Frequency-Tunable Tri-Band Metamaterial-Inspired Antenna** **Objective:** *To design a frequency-tunable tri-band antenna using metamaterial-inspired structures.* **Tools:** Metamaterial-Inspired Structure, Frequency Tuning, Antenna Toolbox **Software:** HFSS or CST	**Antenna Design**
19	**A Reconfigurable Capacitively-coupled Microstrip Bandpass Filter for 4G LTE and 5G Applications** **Objective:** *To design a reconfigurable, capacitively-coupled microstrip bandpass filter supporting 4G LTE and 5G bands.* **Tools:** Capacitive Coupling, Reconfigurable Filter **Software:** HFSS or CST	**Antenna Design**
20	**A Novel Design for Circular Patch Fractal Antenna for Multiband Applications** **Objective:** *To design a circular patch fractal antenna that supports multiple frequency bands.* **Tools:** Fractal Geometry, Circular Patch, Antenna Toolbox **Software:** HFSS or CST	**Antenna Design**
21	**A Compact Hexagonal MIMO Antenna with Enhanced Band width And Isolation for Adaptive 5G/6G Applications** **Objective:** *To design a compact hexagonal MIMO antenna with enhanced bandwidth and inter-element isolation for adaptive 5G/6G applications.* **Tools:** MIMO Antenna, Isolation Enhancement Techniques, Antenna Toolbox **Software:** HFSS or CST	**Antenna Design**
22	**Antiallergic Abdominal Belt for Human Glucose Level Measurement Using Microwave Active Sensor Antenna** **Objective:** *To measure human glucose levels non-invasively using a microwave active sensor antenna integrated into a wearable abdominal belt.* **Tools:** Microwave Sensing Antenna, Wearable Sensor Design **Software:** HFSS or CST	**Antenna Design**
23	**A New Analytically Designed UWB Microstrip Patch Antenna for Future 5G and 6G Applications** **Objective:** *To analytically design an ultra-wideband microstrip patch antenna suitable for future 5G and 6G applications.* **Tools:** Analytical Design Method, UWB Antenna, Antenna Toolbox **Software:** HFSS or CST	**Antenna Design**

S.No	Title / Objective / Tools	Domain
24	**Design of 3 GHZ Helical antenna on circular patch** **Objective:** *To design a helical antenna operating at 3 GHz mounted on a circular patch structure.* **Tools:** Helical Antenna Design, Circular Patch, Antenna Toolbox **Software:** HFSS or CST	**Antenna Design**
25	**A mmWave Low Complexity and Low-Cost Super Wideband Dual-Polarized Aperture Coupled Antenna for 5G Applications** **Objective:** *To design a low-complexity, low-cost, super-wideband, dual-polarized aperture-coupled antenna for mmWave 5G applications.* **Tools:** Aperture-Coupled Feed, Dual Polarization, Antenna Toolbox **Software:** HFSS or CST	**Antenna Design**

takeoff edu GROUP

THANK YOU! FOR CHOOSING TAKEOFF EDU GROUP

INDIA'S TRUSTED ACADEMIC PROJECT PARTNER

Excellent support throughout the project. Friendly staff and quality guidance. Highly recommended!

Siva Charan

★★★★★

Takeoff provided good support throughout the project development process. They delivered the project on time.

Venkatesh U

★★★★★

The team explained the project well. They delivered project on time. Overall the good experience.

Meenakshi Narayan

★★★★★

OUR STUDENTS & PARTNER INSTITUTIONS

LOVELY PROFESSIONAL UNIVERSITY

KL UNIVERSITY

TMC ACADEMY

TEXAS The University of Texas at Austin

University of Hertfordshire UH

VIGNAN'S UNIVERSITY

VIT

BRADLEY University

BITS Pilani

Strathmore UNIVERSITY

MAHATMA GANDHI INSTITUTE OF TECHNOLOGY AUTONOMOUS | Affiliated to JNTUH

MBU MOHAN BABU UNIVERSITY DREAM. BELIEVE. ACHIEVE

6-2-85/B, Old Maternity Hospital Road, Thyagaraja Nagar,
Tirupati, Andhra Pradesh – 517501

+91 90303 33433 | 0877 2261612

www.takeoffprojects.com | info@takeoffprojects.com | /takeoffedugroup