REAL TIME AI POWERED IMPLEMENTATION PROJECTS

JDNET TECHNOLOGIES CUDDALORE

9159395080

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FINAL YEAR PROJECTS

BE

ELECTRICAL AND ELECTRONICS ENGINEERING

100 % PLACEMENT ASSISTANCE

NO:31, SUBBURAYA CHETTY STREET, THIRUPAPULIYUR, CUDDALORE-2
(OPP DARLING ELECTRONICS)

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REAL TIME AI POWERED IMPLEMENTATION PROJECTS

POWER SYSTEMS

1. Optimal Load Flow Analysis for Minimizing Transmission Losses in Smart Grids
2. Reduction of Harmonics Using Active Power Filters in Electric Power System
3. Real-Time Fault Detection and Isolation in Transmission Networks Using IoT
4. Design of a FACTS-Based Controller for Voltage Stability Enhancement
5. Renewable Energy Integrated Power Grid Stability Analysis Using MATLAB
6. Smart Energy Management System for Microgrids Using Predictive Control
7. Adaptive Protection Scheme for Distributed Generation-Integrated Networks
8. Power Quality Improvement Using Unified Power Flow Controller (UPFC)
9. Condition Monitoring of Power Transformers Using Dissolved Gas Analysis
10. Load Forecasting Using Deep Learning Techniques in Smart Power Systems
11. Hybrid Renewable Power System for Remote Electrification Applications
12. Intelligent Distribution Automation Using IoT-Based Sensing Technologies
13. Energy Loss Minimization in Distribution Feeders Using Genetic Algorithms
14. Optimal Placement of Capacitors in Radial Distribution Networks
15. Smart Grid Stability Improvement Using Dynamic Reactive Power Compensation
16. IoT-Based Load Monitoring and Control in Smart Homes
17. Power Theft Detection Using Smart Energy Meters and Edge Computing
18. Voltage Sag and Swell Compensation Using Dynamic Voltage Restorer (DVR)
19. Distributed Energy Resource Management Using Blockchain Technology

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20. Artificial Intelligence-Based Fault Classification in Power Lines
21. Dynamic Load Balancing in Smart Grids Using Fuzzy Logic Control
22. Optimization of Power Flow Using Particle Swarm Optimization Technique
23. Reactive Power Compensation Using STATCOM in Wind Farms
24. Smart Power Distribution Using Embedded Wireless Sensor Networks
25. Enhancement of Grid Reliability Using Wide Area Measurement Systems
26. Real-Time Frequency Regulation in Renewable Energy-Based Systems
27. Multi-Objective Optimization of Economic Load Dispatch Using Evolutionary Algorithms
28. Load Balancing in Hybrid Energy Systems Using Intelligent Control
29. Substation Automation Using IEC 61850 Protocol
30. Performance Analysis of Grid-Connected PV Systems Under Variable Conditions
31. Fault Tolerant Operation of Microgrids Using Adaptive Control
32. IoT-Based Energy Auditing and Consumption Forecasting System
33. Optimal Sizing of Energy Storage for Renewable Integration
34. High Voltage DC Transmission System Modeling and Analysis
35. Load Flow Analysis of Deregulated Power Systems Using Modern Algorithms
36. Design and Simulation of a Smart Substation Using SCADA
37. Energy Management in Smart Campuses Using Wireless Sensor Networks

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REAL TIME AI POWERED IMPLEMENTATION PROJECTS

ELECTRICAL MACHINES AND DRIVES

1. Performance Analysis of Brushless DC Motor Drives Under Varying Load Conditions
2. Sensorless Speed Control of Induction Motor Using Model Reference Adaptive System
3. Direct Torque Control of PMSM for Electric Vehicle Applications
4. Design and Fabrication of High-Efficiency Switched Reluctance Motor
5. Fault Diagnosis in Induction Motors Using Machine Learning Algorithms
6. Real-Time Monitoring of Motor Parameters Using IoT-Based Systems
7. Efficiency Optimization of Electric Drives Using Fuzzy Logic Controllers
8. Vector Control Implementation in Induction Motor Drives Using DSP
9. Design and Control of Linear Induction Motors for Conveyor Systems
10. AI-Based Predictive Maintenance for Rotating Electrical Machines
11. Torque Ripple Minimization in BLDC Motors Using PWM Techniques
12. Adaptive Speed Control of DC Motor Using Neural Networks
13. Energy-Efficient Drive System Design for Industrial Automation
14. FPGA-Based Implementation of Sensorless Motor Control
15. Smart Fault Detection System for Electric Motors Using Vibration Analysis
16. Modeling and Simulation of Synchronous Reluctance Motor
17. Design and Optimization of High-Torque Low-Speed PM Motors
18. Field-Oriented Control of Induction Machines Using Simulink

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19. Predictive Control for Permanent Magnet Synchronous Machines

20. Real-Time Motor Health Prediction Using Edge AI Devices

21. Smart IoT Motor Drive for Condition Monitoring and Control

22. Energy Regeneration in Electric Drives Using Bidirectional Converters

23. Harmonic Reduction in PWM Inverter Fed Motor Drives

24. Wireless Motor Control Using Embedded Systems and Bluetooth

25. High-Performance Control of Servo Motors for Robotics Applications

26. Adaptive Control of Multi-Motor Drive Systems Using MATLAB

27. Load Torque Estimation in Induction Motors Using Extended Kalman Filter

28. Electric Vehicle Motor Drive Design Using PMSM

29. Intelligent Thermal Monitoring of Electrical Machines

30. Multi-Machine Coordination Control for Industrial Automation

31. Energy-Efficient Operation of Variable Frequency Drives

32. Design and Analysis of Axial Flux Permanent Magnet Motors

33. Condition-Based Maintenance for Motors Using Cloud Analytics

34. AI-Powered Speed Estimation and Fault Detection System

35. Electromagnetic Analysis of Modern Electrical Drives

36. Digital Control Implementation for DC-DC Motor Drives

37. Hardware-in-the-Loop Testing of Motor Control Systems

38. Predictive Torque Control of Induction Motors

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POWER ELECTRONICS

1. Design of a Multi-Level Inverter for Grid-Connected PV Systems
2. Efficiency Improvement in DC-DC Converters Using Adaptive Control
3. Active Power Factor Correction Using Boost Converter Topology
4. Design and Control of a Bidirectional DC-DC Converter for EV Applications
5. Harmonic Reduction in PWM Inverter Using SVPWM Techniques
6. High-Frequency Resonant Converter Design for Induction Heating
7. Smart Converter for Battery Charging Using IoT Monitoring
8. Real-Time Control of Grid-Tied Inverters Using DSP
9. Modeling and Simulation of Z-Source Inverters for Renewable Systems
10. MPPT Implementation Using Boost Converter in Solar Systems
11. High-Efficiency Power Converter Design for DC Microgrids
12. Fault Tolerant Converter Design for Renewable Energy Integration
13. DC-DC Converter Design for Supercapacitor Energy Storage
14. Dual Active Bridge Converter for Electric Vehicle Charging
15. Power Electronic Interface for Hybrid Energy Systems
16. AI-Based Control of Multi-Level Inverters
17. Reduced Switch Count Converter for PV Systems
18. FPGA Implementation of PWM Controller for Power Converters
19. Development of a Soft Switching Converter for High Efficiency

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20. IoT Enabled Converter for Smart Battery Management

21. High Voltage DC-DC Converter for Aerospace Applications

22. AC-DC Converter Design for Uninterruptible Power Supply (UPS)

23. Fuzzy Logic Controlled Inverter for Wind Energy Systems

24. Power Electronic Converter for Wireless Charging Applications

25. Multiport Converter Design for Hybrid Energy Sources

26. Real-Time Simulation of Power Electronic Circuits Using MATLAB

27. Efficiency Optimization in Flyback Converters

28. Synchronous Buck Converter Design with High Power Density

29. Design of an Inverter with Reduced Total Harmonic Distortion

30. Power Quality Enhancement Using Active Front-End Converter

31. Isolated DC-DC Converter for Medical Power Supplies

32. High Voltage Gain Converter for Renewable Integration

33. Modular Multilevel Converter Control for HVDC Systems

34. Design and Implementation of a Bidirectional Flyback Converter

35. Compact Converter Design for Portable Electronics

36. Cascaded H-Bridge Inverter for Medium Voltage Applications

37. Predictive Control of Power Converters for Smart Grids

38. Digital Control Implementation of Synchronous Rectifiers

39. Grid Synchronization of PV Inverters Using PLL Techniques

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RENEWABLE ENERGY SYSTEMS

1. Design and Performance Analysis of a Solar-Wind Hybrid Power Generation System
2. MPPT Algorithm Optimization Using Neural Networks for Solar PV Systems
3. Grid Integration of Hybrid Renewable Energy Systems Using Smart Inverters
4. IoT-Based Monitoring of Solar Power Plants with Predictive Maintenance
5. Battery Energy Storage System Management in Solar PV Microgrids
6. Efficiency Enhancement of Wind Turbines Using Pitch Angle Control
7. Hybrid Renewable Energy System for Rural Electrification Applications
8. Dynamic Modeling of Solar-Wind Energy Conversion Systems Using MATLAB
9. AI-Based Forecasting of Solar Irradiance for Optimal Energy Utilization
10. Energy Management System for Smart Microgrids Using Fuzzy Logic
11. Optimal Sizing of PV-Wind Hybrid Systems Using Genetic Algorithm
12. Real-Time Performance Monitoring of Rooftop Solar Systems Using IoT
13. Harmonic Analysis of Grid-Connected PV Systems Under Dynamic Conditions
14. Control of Grid-Tied Inverter for Renewable Energy Integration
15. Maximum Power Point Tracking Using Incremental Conductance Algorithm
16. Smart Energy Distribution in Hybrid Renewable Grids Using AI
17. Design of Off-Grid Solar Power System for Remote Health Centers
18. Analysis of Solar PV Performance Under Partial Shading Conditions
19. Power Quality Improvement in Grid-Connected Renewable Systems

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20. IoT-Based Solar Power Generation Forecasting and Reporting System

21. Economic Analysis of Renewable Microgrids for Industrial Applications

22. Real-Time Control of Hybrid PV-Diesel Systems for Energy Reliability

23. Smart Supervisory Control System for Solar-Wind Integration

24. Efficiency Optimization of Solar Thermal Power Plants Using AI

25. Intelligent Grid Synchronization for Distributed Renewable Sources

26. Implementation of Adaptive MPPT for Variable Solar Conditions

27. Renewable Energy Integration Using Power Electronic Converters

28. IoT-Based Energy Management for Smart Homes with PV Systems

29. Development of Hybrid PV-Wind-Fuel Cell Power Generation System

30. Optimization of Power Flow in Hybrid Renewable Networks

31. Smart Grid Coordination of Distributed Renewable Energy Systems

32. Simulation of Grid-Connected PV Systems with Active Power Control

33. Energy Storage Optimization in Off-Grid Renewable Systems

34. Predictive Control of Wind Energy Conversion Systems

35. Design of an Intelligent Microgrid Using Renewable Energy Sources

36. Power Electronics Interface for Renewable Hybrid Systems

37. Load Forecasting in Renewable Energy Systems Using Machine Learning

38. Integration of Electric Vehicles with Renewable Microgrids

39. Fuzzy-Based Load Management in PV-Battery Systems

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REAL TIME AI POWERED IMPLEMENTATION PROJECTS

CONTROL AND AUTOMATION SYSTEMS

1. Design of an Intelligent PID Controller Using Fuzzy Logic for Process Control
2. PLC-Based Automation System for Smart Industrial Plants
3. IoT-Based SCADA Monitoring and Control System for Power Plants
4. Adaptive Control of Robotic Arm Using Machine Vision Feedback
5. Real-Time Process Automation Using Programmable Logic Controllers
6. Model Predictive Control for Industrial Temperature Regulation
7. Smart Automation for Conveyor Belt Systems Using Sensors and PLC
8. Fuzzy Logic-Based Autonomous Navigation Control for Mobile Robots
9. Design and Implementation of a Digital Twin for Industrial Automation
10. Intelligent Traffic Light Control System Using AI and IoT
11. Wireless Automation System Using ZigBee and Embedded Control
12. Feedback Control for DC Servo Motor Positioning Using PID
13. Predictive Maintenance in Industrial Automation Using Machine Learning
14. SCADA-Based Real-Time Control of Water Distribution Systems
15. AI-Powered Smart Factory Automation Using Edge Computing
16. PLC and HMI Integrated System for Process Monitoring
17. Automation of Packaging System Using Sensor Integration
18. Advanced Control of Multi-Agent Robotic Systems Using AI
19. IoT-Enabled Smart Industrial Control and Monitoring System

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20. Distributed Control System for Power Plant Operation

21. Robotic Arm Control Using Image Processing and PID Algorithm

22. Smart Manufacturing Using AI and Industrial IoT (IIoT)

23. Real-Time Automation of Conveyor Systems Using PLC and SCADA

24. PID and Fuzzy Hybrid Controller for Temperature Control Systems

25. AI-Based Fault Detection in Industrial Automation Processes

26. PLC-Based Control of Automated Bottle Filling Plant

27. Remote SCADA Control System for Renewable Power Plants

28. Automation of Greenhouse Climate Control Using Sensors

29. Intelligent Elevator Control System Using Microcontroller

30. Industrial Motor Control Using PLC and Human-Machine Interface

31. Autonomous Vehicle Navigation Using PID and Machine Vision

32. Model Predictive Controller Design for Nonlinear Systems

33. IoT-Based Smart Warehouse Automation and Monitoring System

34. Distributed Robotic System Coordination Using Multi-Agent Control

35. Predictive Maintenance Using Vibration and Current Signature Analysis

36. Smart Adaptive Control System for Process Optimization

37. Wireless Control of Industrial Equipment Using Wi-Fi and MQTT

38. Automation of Sewage Treatment Plant Using PLC and Sensors

39. PID Tuning Using Genetic Algorithm for Nonlinear Systems

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40. Real-Time Monitoring and Control of Smart Irrigation System

41. PLC-SCADA Integration for Energy Efficiency in Industrial Plants

42. IoT-Based Predictive Analytics for Industrial Automation

43. Control of Inverted Pendulum Using Fuzzy-PID Hybrid Approach

44. Cloud-Based SCADA System for Distributed Industrial Networks

45. Intelligent Factory Control Using Machine Learning Algorithms

46. Automation of Material Handling Using Robotic Arm and Vision

47. Real-Time Control System for Autonomous Drone Navigation

48. PID Controller Design Using MATLAB for DC Servo Applications

49. Fault-Tolerant Control System Design for Critical Industrial Processes

50. AI-Assisted Predictive Control for Smart Manufacturing Lines

EMBEDDED SYSTEMS & IOT IN ELECTRICAL ENGINEERING

1. IoT-Based Smart Energy Meter for Real-Time Power Consumption Monitoring
2. Embedded System for Fault Detection and Isolation in Power Distribution
3. Smart Street Lighting System Using IoT and Motion Sensors
4. Wireless Energy Monitoring and Billing System Using ESP32 and Cloud
5. Design of a Smart Grid Communication System Using Embedded IoT Devices
6. IoT-Based Transformer Health Monitoring System Using Edge AI
7. Smart Home Automation System Using Voice and Mobile Control

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8. Embedded Controller for Solar Tracking System Using Arduino
9. Real-Time Air Quality Monitoring and Analysis Using IoT Sensors
10. Embedded IoT System for Smart Agriculture Using LoRa Communication
11. Intelligent Water Level Monitoring and Control Using GSM Technology
12. IoT-Based Energy Auditing and Load Management System
13. Embedded Design for Automatic Fault Detection in Transmission Lines
14. Smart Power Outlet with Real-Time Energy Analytics
15. IoT-Enabled Electrical Safety System Using Current and Voltage Sensors
16. Smart Electric Vehicle Charging Management Using Cloud IoT
17. Embedded AI-Based Load Forecasting for Smart Homes
18. Real-Time Industrial Machine Monitoring Using IoT Sensors
19. Smart Grid Automation Using Edge-Based IoT Nodes
20. Low-Power Embedded Controller for Energy Harvesting Applications
21. IoT-Enabled Substation Equipment Monitoring System
22. Wireless Embedded Sensor Network for Industrial Energy Management
23. Smart Wearable for Electrical Safety and Shock Detection
24. IoT-Based Predictive Maintenance for Motors and Drives
25. Smart Energy Dashboard Using Embedded Cloud Analytics
26. Design of an Embedded System for Grid Fault Detection
27. IoT-Based Remote Monitoring of Renewable Energy Systems

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28. Wireless Sensor Network for Smart Power Distribution

29. Embedded Control of Intelligent Home Energy Systems

30. AI-Based Embedded System for Smart Building Energy Optimization

31. IoT-Based Transformer Oil Temperature and Vibration Monitoring

32. Embedded Power Monitoring Unit for Industrial Applications

33. Smart Plug Device Using IoT for Real-Time Power Tracking

34. Energy Management System Using Embedded Controllers and Cloud API

35. IoT-Based Health Monitoring of Electric Motors in Industries

36. Embedded Gateway for Secure IoT Data Transmission in Smart Grids

37. Low-Cost Embedded Smart Power Analyzer for Laboratories

38. Real-Time Electrical Load Control Using IoT and Edge Devices

39. Smart Power Management Using AI-Enabled Embedded Controllers

40. IoT-Based Fault Prediction System for Electrical Panels

41. Smart IoT Device for Overload and Short Circuit Prevention

42. Embedded Cloud-Controlled Energy Metering System

43. Wireless IoT-Based Energy Theft Detection and Prevention System

44. Embedded Control System for Home Energy Automation

45. Smart Building Energy Control Using IoT and MQTT Protocol

46. AI-Enabled Edge Device for Grid Fault Analysis

47. IoT-Based Energy Optimization Using Predictive Algorithms

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Connect With Us

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