Thomas Ben

Electrical Engineer

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- Results-driven Electrical Engineer with 4+ years of experience in power systems design and renewable energy integration, specializing in grid modernization and smart infrastructure solutions
- Proven track record of reducing energy consumption by up to 28% through innovative power distribution system designs and implementing cost-effective automation solutions that saved $180K annually
- Expert in MATLAB/Simulink, AutoCAD Electrical, and PLC programming with hands-on experience in high-voltage testing, protection coordination studies, and IEEE/NEC compliance
- Licensed Professional Engineer (PE) in Texas with strong project management skills, leading cross-functional teams of up to 8 engineers on utility-scale renewable energy projects

WORK EXPERIENCE

March 2022 - Present

Meridian Power Solutions

Senior Electrical Engineer

- Design and implement utility-scale solar and wind integration systems for 50MW+ renewable energy projects, achieving 97% grid compliance rate and reducing interconnection approval time by 35%
- Lead protection coordination studies for transmission substations using ETAP software, preventing equipment failures and reducing system downtime by 42%
- Manage cross-functional engineering teams of 6-8 professionals on $15M+ infrastructure projects, consistently delivering on-time and 12% under budget
- Develop custom SCADA system interfaces for remote monitoring of distributed energy resources, improving operational efficiency by 31%
- Conduct arc flash analysis and electrical safety assessments for industrial facilities, ensuring NFPA 70E compliance and reducing safety incidents by 89%

June 2020 - February 2022

TechGrid Industries

Electrical Engineer

- Designed power distribution systems for commercial buildings ranging from 480V to 13.8kV, optimizing load flow analysis and reducing energy costs by 23% for clients
- Programmed and commissioned Allen-Bradley PLCs for automated manufacturing systems, increasing production throughput by 28% while maintaining safety standards
- Performed electrical system troubleshooting and root cause analysis, reducing equipment downtime from 18 hours to 4 hours average per incident
- Created detailed electrical schematics and technical documentation using AutoCAD Electrical, supporting $8M in successful project implementations
- Collaborated with mechanical and civil engineering teams on multidisciplinary projects, ensuring seamless integration of electrical systems with overall facility design

August 2019 - May 2020

Pinnacle Engineering Consultants

Associate Electrical Engineer

- Conducted load calculations and power quality analysis for industrial clients, identifying harmonic distortion issues and implementing filtering solutions that improved power factor to 0.95+
- Assisted in design of motor control centers and variable frequency drive applications, optimizing energy efficiency for HVAC systems in 200,000+ sq ft facilities
- Performed field testing and commissioning of electrical equipment including protective relays, transformers, and switchgear up to 25kV class
- Supported senior engineers in preparation of electrical specifications and bid documents for municipal utility projects valued at $3M+

EDUCATION

May 2019

University of Texas at Austin

Master of Science in Electrical Engineering

Specialization: Power Systems and Renewable Energy Integration

GPA: 3.8/4.0 | Graduate Research Assistant

Thesis: "Optimal Placement of Energy Storage Systems in Distribution Networks for Voltage Regulation"

May 2017

Texas A&M University

Bachelor of Science in Electrical Engineering

ABET Accredited Program | GPA: 3.7/4.0 | Magna Cum Laude

Dean's List: Fall 2015, Spring 2016, Fall 2016, Spring 2017

Relevant Coursework: Power Electronics, Electric Machinery, Control Systems, Digital Signal Processing, Electromagnetic Fields, Power System Analysis

SENIOR DESIGN PROJECT

Microgrid Control System for Campus Emergency Power

- Led team of 4 engineers to design and prototype a 100kW microgrid system with solar PV, battery storage, and diesel backup integration
- Implemented advanced control algorithms using MATLAB/Simulink that achieved seamless islanding capability and 15% improvement in load balancing efficiency
- Project selected for presentation at IEEE Region 5 Student Conference and received Outstanding Senior Design Award

TECHNICAL SKILLS

Design Software: AutoCAD Electrical, MATLAB/Simulink, ETAP, PSS/E, SKM PowerTools, OrCAD PSpice

Programming Languages: Python, C/C++, VHDL, Ladder Logic, Structured Text, Function Block Diagram

Control Systems & Automation: Allen-Bradley PLCs (ControlLogix, CompactLogix), Siemens S7 Series, HMI Development, SCADA Systems, Modbus/PROFIBUS Protocols

Test Equipment & Instrumentation: Digital Oscilloscopes, Power Quality Analyzers, Protective Relay Test Sets, Megger Testing Equipment, Fluke Multimeters, High-Voltage Test Equipment

Power Systems Specialization: Load Flow Analysis, Short Circuit Studies, Protection Coordination, Arc Flash Analysis, Renewable Energy Integration, Grid Interconnection Studies

Standards & Codes: NEC (National Electrical Code), IEEE Standards (519, 1547, C37), NFPA 70E, NERC Reliability Standards, IEC 61131

CERTIFICATIONS & LICENSES

March 2022

Professional Engineer (PE) License
Texas Board of Professional Engineers

Valid through December 2024

NETA Level II Certification
Electrical Testing and Maintenance

January 2023

OSHA 30-Hour Construction Safety
Electrical Safety Focus

Valid through June 2024

Arc Flash Safety Qualified Worker
NFPA 70E Compliance Training

Active since 2018

IEEE Power & Energy Society Member
IEEE

PROJECTS

2023

West Texas Wind Farm Integration Project
- Designed electrical infrastructure for 75MW wind farm including 34.5kV collection system and 138kV transmission interconnection
- Performed comprehensive grid impact studies and coordinated with ERCOT for interconnection approval, achieving full compliance with Texas grid codes
- Managed $2.1M electrical scope delivering project 6 weeks ahead of schedule and generating 180GWh annually

2021

Smart Manufacturing Automation Upgrade
- Retrofitted legacy manufacturing facility with modern PLC-based control systems and industrial IoT sensors for predictive maintenance
- Implemented energy monitoring systems that identified $85K in annual energy savings opportunities through optimized equipment scheduling
- Achieved 99.2% system uptime during 6-month post-implementation monitoring period

AWARDS

2023

IEEE Power & Energy Society Outstanding Young Engineer Award - Texas Section
IEEE
- Recognized for contributions to renewable energy integration and grid modernization in Texas
- Selected from 150+ nominees across Texas IEEE sections

2022

Meridian Power Solutions Excellence in Innovation Award
Meridian Power Solutions
- Honored for developing novel approach to voltage regulation in high-penetration solar distribution

networks

- Innovation resulted in 15% reduction in voltage regulator equipment costs for utility clients

2017

Texas A&M Outstanding Senior Design Project Award

Texas A&M University

- Recognized for microgrid control system design demonstrating exceptional technical merit and practical application

PUBLICATIONS

June 2023

Adaptive Voltage Control Strategies for Distribution Networks with High Solar PV Penetration

IEEE Transactions on Power Delivery

T. Blackwood, R. Martinez, and K. Chen, vol. 38, no. 3, pp. 1456-1467

July 2022

Economic Analysis of Battery Energy Storage Systems for Grid-Scale Renewable Integration

IEEE Power & Energy Society General Meeting

S. Williams, **T. Blackwood**, and J. Thompson, presented at Orlando, FL

August 2021

Machine Learning Applications in Predictive Maintenance for Electrical Distribution Equipment

IEEE Power Engineering Review

T. Blackwood and Dr. Patricia Vance, vol. 41, no. 8, pp. 23-31