

# Bhawna Poddar

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## Profile

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Entry-level Electrical Engineer with a strong foundation in power system protection, SEL relay configuration, and IoT-enabled system design. Skilled in developing electrical layouts, one-line diagrams, and SCADA integration using MATLAB/Simulink, Altium, and AutoCAD. Proven track record in prototype assembly, field testing, and cross-functional coordination gained through academic protection projects and professional IoT deployments.

## Professional experience

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### Extreme Endeavors

Aug 2025 - Oct 2025

*Electrical engineer/IOT SPECIALIST*

*Fairmont*

- Designed, built, and deployed IoT-enabled electrical systems using Altium, Rhino 3D and C, applying fundamentals of engineering to enable remote monitoring of equipment across multiple sites
- Implemented electrical design and IoT systems with SCADA platforms using Altium and C, improving real-time data acquisition for plant operators
- Designed, assembled, and tested IoT products—including sound monitors, cave modules, IPAC3P, pump controllers, and tank monitors—delivering functional prototypes ready for field trials
- Oversaw field installation, testing, assembly, and deployment of Cave Monitoring Modules, calibrating temperature and pressure sensors and coordinating with engineers and field teams, facilitating continuous monitoring and improved data reporting to stakeholders
- Built and evaluated IoT devices to meet the Build America Buy America (BABA) standard using, ensuring all PCBs and enclosures were U.S. made and delivering compliant, client approved hardware on schedule

### Cleveland State university

Sep 2024 - Apr 2025

*Parking Customer Service Assistant*

*Cleveland*

- Provided customer service to visitors, teachers, and students regarding accounts, parking permits, and citations; oversaw cash transactions, issued permits, and entered data accurately using Microsoft Office, which helped maintain errorfree records and smooth payment processing
- Managed the issuance of permits, maintained daily parking operations, and organized records. Kept a polished, customer-focused atmosphere while using parking management technologies and Microsoft Office for payments and data updates.

## Education

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### Cleveland State University

Aug 2022 - May 2025

*Master's, Electrical and Electronics Engineering*

- **Coursework:** Electrical and computer engineering

### Guru Nanak Institution Technical Campus

Sep 2014 - Jun 2018

*Bachelors, Technology, Electronics and Communication Engineering*

- **Coursework:** Electronics and communication engineering

## Technical Skills

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- **Engineering Software and Modelling:** MATLAB/SIMULINK, AutoCAD, Altium designing, Rhino 3D, MPLAB IPE/IDE-, SEL-5025 application, Power World simulator, OrCAD PSPICE, C LANGUAGE
- **MS Office:** Word, Excel, PowerPoint
- **Testing and Validation:** System Testing, Circuit testing, Troubleshooting.
- **Assembly and Fabrication:** Electrical product assembling, IoT system design, Soldering, Bill of materials, PCB Design Knowledge.
- **Electrical Design and Certification:** Electrical Design, Fundamentals of Engineering.
- **Professional Attributes:** Analytical Skills, Passion for sustainability, Independence.

## Relevant Academic Projects

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### DESIGN EHV TRANSMISSION LINE PROTECTION USING AN SEL 411L RELAYS WITH IMPEDANCE DISTANCE PROTECTION

#### Department of Electrical Engineering and Computer Science

- Used SEL 411L relays to design impedance distance protection for a three-phase EHV transmission line.
- Set relay zones (Zone-1: 80%, Zone-2: 120%, Zones 3&4: 220%) and computed fault values (A-G, ABC, B-C) using Excel.
- Relay components (LOP, SOTF, load encroachment, and out-of-step blocking) as well as 3-, 2-, and single-phase faults were simulated.
- SynchroWave event summaries were examined, findings were presented, and the findings were recorded in a 37-page report.

## **DESIGN DISTRIBUTION FEEDER PROTECTION USING AN SEL 451 RELAY**

### **Department of Electrical Engineering and Computer Science**

- SEL 451 relay with fuse-reclosing for transient faults was used to design distribution feeder protection for a 13.8 kV radial line.
- Relay settings for single-, three-, under-voltage, and under-frequency circumstances were created in AcSELErator Quick-set; trips were simulated in MANTA MTS-5000 with delays of two, ten, fifteen, and thirty seconds (up to four recloses).
- Synchro Wave was used to record event summaries and output graphs, which were then presented and recorded in a 32-page report.

## **DESIGN SUBSTATION POWER TRANSFORMER PROTECTION USING SEL 487E RELAY**

### **Department of Electrical Engineering and Computer Science**

- Worked in a group to employ SEL 487E relays to create percentage differential (87) protection for a three-phase Westinghouse Delta-Wye power transformer.
- With time delays of two, ten, fifteen, and thirty seconds, internal and external fault conditions were simulated. Selective tripping for four recloses was set up based on pre-fault and fault current/frequency values.
- Synchro Wave was used to create PHASOR diagrams and event summaries; findings were presented and outcomes were recorded in a 24-page report.

## **DESIGN AND DEVELOPMENT OF SENSOR--BASED INTELLIGENT AUTO-IRRIGATION SYSTEM**

### **Department of Electrical Engineering and Computer Science**

- To save fuel expenses and increase farmers' irrigation efficiency, I worked with a group to create a sensor-based, solar-powered auto-irrigation system.
- To guarantee timely project progress, I organized weekly meetings with consultants, instructors, and teammates.
- Results were given to local experts and documented in a 78-page report.

## **Extra-curricular activities**

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### **Cleveland State University**

#### *Former member of SGA (Student Government Association)*

- Former member of SGA (Student government association) at CSU and work under DEI committee. DEI committee is "Diversity committee," which helps many international students with their problems they face related to academics, housing, communication, and many other things. DEI committee also works with various other ethnicity associations and guides them.

