

# PREM KUMAR REDDY SHABAD

Tempe, Arizona | [pshab001@fiu.edu](mailto:pshab001@fiu.edu) | +14849832911 | [LinkedIn](#)

---

## SKILLSET AND EXPERIENCE SUMMARY

- Developed Digital Twin simulation model for motor gearbox for analysis, execution of manual and automated testing. Developed dashboard platform for predictive maintenance and conditioning monitoring. Used the data for further analysis and presentations. **Skills Used:** Labview, ANSYS, Python, Unity 3D, C++, ROS, Ubuntu, MS Excel, R, Tableau.
- Experienced on 5G RAN (gNB) testing in lab, executing test cases and regression testing. Experienced in Functional Testing, Regression Testing, Requirement gathering, risk analysis, bug reporting.
- Experienced in building and protecting the digital twin of lab sized [shipboard power systems setup](#) at FIU. Experienced in using machine learning algorithms for device and network attacks. Experienced in website development and maintenance **Skills used:** Python, Labview, raspberry pi, Communication protocols (DNP3, Modbus TCP, IEC61850), MATLAB, Simulink, NI Multism, HTML/CSS, Python, SQL, MS SQL server.
- Experienced in data analysis, electrical equipment design, and test electrical equipment. Developed an anomaly detection algorithm for smart grid protection using Python and Machine learning algorithms within an IDE from Anaconda package (jupyter, Rstudio, Spyder). Experience in power quality and system monitoring with SEL 735, ABB PMU.
- Experienced in IC design for missile components and configuration of load cells. Missile testing for compact antennas and reviewing design documents. **Skills used:** PSPICE, ALTIUM, ORCAD v17.2, Simulink, VHDL programming.
- Installed and maintained professional oversight of electrical plant with large equipment such as turbines, generators, compressors using PLC and SCADA. Skills Used: C, Ladder programming, TIA portal, Siemens S7-1200

## PROFESSIONAL EXPERIENCE

---

**Electrical Engineer**, L&T Technological Services | Orchestra Technology, Texas, USA.

**January 2022- February 2023**

- Created 3D simulation models using ANSYS to test over 500 scenarios with up to 80% accuracy within 24 hours, allowing real-time system monitoring and predictive maintenance capabilities.
- Developed Digital Twin simulation models using Labview, ANSYS, Python, Unity 3D, C++, ROS, Ubuntu.
- Successfully integrated the gaming environment with HoloLens 2 to enable augmented reality feature, increasing efficiency by 40%. Engineered programming solutions utilizing C++ language to control speed & torque of the robotic arm, allowing seamless integration into existing systems and increasing efficiency by 50%.

**Electrical engineer R&D**, Florida International University, Miami, USA

**September 2020- December 2021**

- Successfully implemented a grid of 12 Raspberry Pi's connected via Ethernet utilizing DNP3 & TLS protocols, resulting in increased safety compliance by 80%. Successfully integrated the setup into a lab scale microgrid setup operating with LABVIEW.
- Integrated machine learning algorithms into the simulation platform for predictive analysis & fault detection/diagnostics, resulting in a 10% decrease in downtime. Constructed & maintained 3 laboratory websites using WordPress, resulting in an average of 15K monthly visits. Created technical documentation for AC side of smart grid with variable loads and presented to a panel of naval research.
- Integrated and installed AC and DC systems for a lab scaled power systems grid with wind and battery power source, IEDs, controllers, protection relays, LABVIEW software, and DDS communication protocol.
- Developed an anomaly detection model utilizing machine learning algorithms to detect and classify anomalous events in a real-world smart grid system, resulting in improved power quality and accuracy of up to 95%.

**Control Systems Engineering Intern**, Research Centre Imarat (RCI), Hyderabad, India

**November 2018- May 2019**

- Calibrated over 100 load cells with varying pressures to ensure accuracy of readings, improving data reliability by 75%.
- Conducted rigorous climatic and dynamic testing on PRITHVI missile's avionics systems & compact antennas, ensuring airworthiness of the system.

**Power Systems Engineer Intern**, Bharat Heavy Electrical Limited (BHEL), Hyderabad, India

**May 2017- June 2017**

- Installation and professional oversight of electrical plant with large equipment such as turbines, generators, compressors using PLC and SCADA. Operation and protection of turbines, compressors, and generators.

## PUBLICATIONS AND CERTIFICATIONS

---

Anomaly Detection in Smart Grids using Machine Learning ([IEEE IECON 2021](#)).

**November 2021**

Nokia Cloud Packet Core certified (4A0-M03)

**February 2021**

## EDUCATION

---

**Master of Science in Engineering – Electrical and Electronics Engineering (GPA: 3.70/4.0)**

**December 2021**

Florida International University – Miami, Florida

**Related Courses:** Machine Learning • Network Security • Smart Grid • Sensor programming with python • Circuit Design