

# MOHAMMED SHEHZAD K SALIM

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## PROFESSIONAL SUMMARY

Motivated Electrical & Electronics Engineer specializing in FPGA-based control systems, power electronics, and solar PV system design. Proficient in 3-phase inverter design, FPGA controller card development, embedded programming (C, Python), and simulation tools (MATLAB/Simulink, SPICE). Recently completed an M.Tech in VLSI & Embedded Systems, expanding R&D and system design skills. Over 6+ years of experience in electrical systems design, project coordination, and solar energy consultancy. Skilled in designing 3-phase power systems, high-voltage UPS units, and solar PV systems for various applications. Proficient in managing electrical utility GIS mapping and planning using Primavera P6 and ArcGIS. Experienced in leading solar project execution and sales as an external consultant to support MNRE-approved initiatives. Recently completed an M.Tech in VLSI & Embedded Systems to enhance FPGA development, embedded systems, and R&D expertise.

## SKILLS

### • ELECTRICAL SYSTEMS

- Solar PV System Design, Substation Layouts, Power Distribution, UPS Systems, AC-DC / DC-AC Converters

### • DESIGN & SIMULATION

- PVSyst, LTSpice, ETAP, PCB Design (Altium), MATLAB/Simulink

### • EMBEDDED SOFTWARE

- Verilog HDL, Embedded C, FPGA (Efinity, Icarus Verilog)

### • PROJECT PLANNING & GIS TOOLS

- Primavera P6 (Certified), ArcGIS

## WORK HISTORY

### EXTERNAL SOLAR PROJECT & SALES CONSULTANT, JUMBO SOLAR POWER, ALUVA, INDIA – APRIL 2022 - APRIL 2025

- Company Overview: MNRE-approved vendor ranked 13th among Kerala's top 50 vendors by the Central Government.
- Advised clients on appropriate product selections based on their unique needs, ensuring optimal satisfaction levels upon purchase.
- Used consultative sales techniques to understand customer needs and recommend relevant products and services.
- Collaborated on KSEB-supported DCR and Non-DCR solar projects, ensuring timely delivery and client satisfaction.
- Responded to telephone and in-person requests for information.
- Maximized customer retention by resolving issues quickly.
- Developed and maintained strong working relationships with professionals within assigned territory.
- Contributed to event marketing, sales and brand promotion.

### INTERN R&D ENGINEER, MARINE ELECTRICALS INDIA LTD , KOCHI, INDIA – JUNE 2024 - JUNE 2025

- Supported staff members in their daily tasks, reducing workload burden and allowing for increased focus on higher-priority assignments.
- Designed FPGA based controller card and 3 phase inverter.
- Prepared project presentations and reports to assist senior staff.
- Presented findings from research projects at industry conferences, to establish a strong idea for my project.
- Maintained up-to-date knowledge of industry trends, standards, regulations, allowing for proactive adaptation of products as needed.
- Collaborated with other departments to facilitate successful project completion.
- Developed comprehensive engineering documents for all projects.

### GIS ENGINEER, NEST DIGITAL PVT LTD , KOCHI, INDIA – MAY 2019 - SEPTEMBER 2022

- Worked on substation and electrical utility planning using ArcGIS.
- Scheduled project timelines and tasks using Primavera P6, enabling on-time delivery and accurate spatial data mapping.
- Contributed to GIS database creation for network layouts.
- Managed complex GIS projects from inception to completion, ensuring timely delivery and accurate results.
- Proficient in GIS analysis, documentation and mapping.
- Presented technical reports and findings to stakeholders, effectively communicating complex GIS concepts in a simplified manner.
- Leveraged advanced geospatial techniques, such as 3D modeling and LiDAR analysis, to produce innovative solutions for complex engineering challenges.
- Developed GIS models and mapping solutions for unique requirements.
- Managed GIS databases and modified parameters for different needs.
- Analyzed spatial data trends to inform decision-making processes for various projects, leading to more effective planning strategies.

### DESIGN ENGINEER, UNITEK POWER SOLUTIONS INDIA LTD , KOCHI, INDIA – DECEMBER 2017 - JANUARY 2019

- Designed and developed high-power electrical systems, including 3-phase Uninterruptible Power Supply (UPS) units and power converter circuits (AC-DC/DC-AC) for industrial and infrastructure applications.
- Led the design of a 110 kV UPS for the Greater Noida Metro Rail project, coordinating with cross-functional teams to meet technical specifications and safety standards, ensuring reliable backup power for critical operations.
- Streamlined the design process for increased efficiency by utilizing advanced CAD software tools.
- Addressed design challenges and evaluated alternative design models to meet project requirements.

## EDUCATION

### M.TECH IN ELECTRONICS AND COMMUNICATION, MAR ATHANASIOUS COLLEGE OF ENGINEERING, KOTHAMANGALAM, KERALA - MAY 2025

- Relevant Coursework: Advanced Digital System Design, VLSI Design Methodologies, Embedded Systems Programming, FPGA Prototyping
- Internship, Research & Development Engineer, Marine Electrical India Limited
- Dissertation: Innovative FPGA Controller Card For Inverter Systems
- UART Controlled Stopwatch using FPGA module
- FPGA Hardware Designing & UART Interfacing
- Three Phase Inverter Designing and Hardware Implementation
- FPGA Controller Card Designing and Hardware Implementation

### B.TECH IN ELECTRICAL AND ELECTRONICS ENGINEERING, K M E A ENGINEERING COLLEGE, EDATHALA, KERALA - 2017

- Capstone Project: Led a team to develop a "Safe Car Drive" system integrating sensors and image capture to enhance driving safety.
- Completed specialized courses in Power Electronics and Renewable Energy Systems, gaining a strong foundation in power generation, transmission, and distribution technologies.

## PROJECTS

### FPGA CONTROLLER CARD FOR INVERTER SYSTEMS (JUN 2024 - JUN 2025)

- Designed schematic and hardware for three phase inverter that takes 320V to 1200V DC and can take upto 10kW load using Altium Designer
- Designed Current and Voltage Sensing circuit for feedback using Altium Designer
- Designed PI Controller for feedback system using Matlab Simulink
- Designed and tested FPGA Controller Card for the designed inverter using Icarus Verilog and Efinity Software
- Developed the PI controller code using Icarus Verilog and it was tested in gtkwave.
- Developed and ran the PI Controller model in Matlab Simulink that primarily used transformation block method.

### FPGA-BASED SPWM GENERATOR (JAN 2024)

- Developed verilog code to generate single phase and three phase Sinusoidal Pulse Width Modulated (SPWM) wave using Icarus Verilog.
- Tested the code firstly in Icarus Verilog, generated waveform in Gtkwave and then it was run on efinity software and output waveform was obtained using Digital Oscilloscope.
- Developed and ran the SPWM generation model in Matlab simulink.

### UART COMMUNICATION MINI-PROJECT (DEC 2023)

- Designed and developed T20 series Efinix T20Q144I4 FPGA development board using Altium Designer.
- Designed and tested the UART Communication using Putty Software.
- The development board designed was later used for The Dissertation project.

## CERTIFICATIONS

- **Complete Solar Energy PV Design Course** - Certificate url - [ude.my/UC-c2638624-9b65-4b14-a56b-ce3fdd4a7967](https://ude.my/UC-c2638624-9b65-4b14-a56b-ce3fdd4a7967)
- **Microcontroller Embedded C Programming: Absolute Beginners** - Certificate url - [ude.my/UC-15fa5c42-ef63-4be5-bc1e-32f38aae1dcb](https://ude.my/UC-15fa5c42-ef63-4be5-bc1e-32f38aae1dcb)
- **Ultimate Electrical Design** - Certificate url - [ude.my/UC-3a743af2-ebfa-4108-a6c1-7d6b7572e1d0](https://ude.my/UC-3a743af2-ebfa-4108-a6c1-7d6b7572e1d0)
- **Primavera P6 - Certified Project Planning & Scheduling Professional** - Certificate url - [ude.my/UC-c9785e9f-ddab-4b08-811a-7566d438d522](https://ude.my/UC-c9785e9f-ddab-4b08-811a-7566d438d522)

## REFERENCES

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