Muhammad Saad Khan

Islambad, Pakistan | +92 3445854564 | fantasmaamante09@gmail.com |

EDUCATION

National University of Sciences and Technology (NUST)

- *Bachelor of Engineering in Electrical Engineering* *2020 – 2024*
- **Courses:** Probability and Statistics, Numerical methods, Complex variables and Transforms**,** Digital System Design**,** Power Electronics**,** Machine Learning**,** IC Design, Project Management. Renewable Energy Systems
- **FYP: "**VSLAM Implemented Robotic Vacuum**"**
- **A Grade in FYP**

KIPS College Rawalpindi

- *FSC(Pre-engineering)* *2018 – 2020*

Roots International Schools

- *O Levels* *2016 – 2018*

EXPERIENCE

SINES NUST |Research Assistant 1 Jan 2025 - Present

- Developing Reinforcement learning algorithms for UAV Flight controller
- Training RL Agent on MATLAB and Simulink
- Enforcing Machine learning techniques on UAV

Bytewise Limited |Data Science Intern 1 *Sep 2022 – 1 Dec 2022*

- Analyzing data frames using pandas and learned basics on cloud computing
- Managing large datasets on excel sheets and Jupyter notebook
- Utilizing Machine learning algorithms and foreign client coordination

PROJECTS

VSLAM Implemented Robotic Vacuum

- Designed & developed a robot that utilizes **visual odometry** for **simultaneous localization and mapping**. Entire Chassis was designed on AUTOCAD and 3D printed. The robot was then automated using **Raspberry pi and 6 motors**, which provide the necessary driving torque for the wheels.

Solar Hybrid System design

• Engineered an advanced solar hybrid system by accurately sizing inverters, batteries, and cables, increasing energy efficiency by 25% and reducing operational costs by 15% annually.

PICOBLAZE 8-bit FPGA Microcontroller (Verilog)

- Designed an 8 bit Open source RISC Microcontroller for FPGA. By using Assembler for converting assemble language to machine executable file

Global Greenhouse on PIC Microcontroller

- Designed a global greenhouse system using PIC 18F457 along with Temperature and intensity sensors.

Face Detection with PyCharm

- Incorporated face detection algorithms from OPENCV and LED blinked through microcontroller.

Buck Converter with PID Controller design

- Designed 15 to 5V buck converter and PID controller was implemented using TL494 and designed using sisotool on MATLAB.

ALU (Arithmetic Logic Unit).

- On selection bits of MUX, addition, subtraction, comparison and counter operations implemented.

Honors & Achievements

- Earned Certifications in **MATLAB**, Python Programming.
- Awarded **2nd Position** in Final Year Project
- FYP selected as top 5 best projects of electrical department

SKILLS & PERSONAL

Technical Skills: CAD(AUTOCAD), Programming Python/C++/MATLAB/Collab, Microsoft 365, Proteus, Quartus, Model Sim

Soft Skills: Teamwork, Communication, Leadership, Project Management, Presentation

Interests: Volunteer work, Research & Designing, Coding, Robotics, LEGO Building