

Muhammad Minhaj

Senior R&D Electronics Engineer



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Qualification

- ❖ **B.S. Electronics Engineering,**
UET Peshawar, Pakistan
PEC Registration: ELECTRO/26685

Capability Matrix

- ❖ **Microcontrollers**
Arduino: UNO,MEGA,NANO
STM32:STM32H7,STM32F1,STM32F0
STM32F4,STM32F7
PIC: PIC12,PIC16,PIC18
ESP: ESP32,ESP8266
- ❖ **PCB Tools**
Altium
DesignSpark
EasyEDA
KiCad
- ❖ **Simulation Tools**
TINA
LTSpice
Proteus
Matlab
PSpice
Multisim
- ❖ **CAD**
Fusion 360
FreeCAD
- ❖ **Certification**
Embedded Systems Bare-Metal
Programming Ground Up™ (STM32)

Objective

My objective in life is to continuously learn, improve and apply my technical and professional expertise for the benefit of my employer and myself. I want to help people around me in my capacity and make them even better with time. I always want myself and the people around me to work continuously for the betterment of society, country, and the world.

Profile

- Proven ability to develop complete end-to-end electronic products from concept to creation and lead complex fast-paced projects.
- Excellent experience in Defining product requirements, Circuit design, Schematic capture, PCB design, Debugging tools, Oscilloscope, and other lab equipment.
- Superior proficiency in designing signal conditioning and instrumentation circuits for different types of sensors.
- Analogue design experience including active/passive filters, 0 -10V, 4-20mA, ADCs, Op-Amps, and Instrumentation Amplifiers.
- Digital design experience including logic, microcontrollers, Communication protocols like SPI, I2C, UART, RS485, RS232, MODBUS RTU/TCP,
- Good knowledge of SMPS, Power design, DC/DC Converters, and FETs.
- Experience in power, analogue & digital circuit simulation and power/signal integrity analysis.
- Hands-on experience in high-speed mixed-signal, EMI, and noise reduction.
- Selection of components (ICs, Resistors, Capacitors, etc...) and preparing cost-effective BOM (Bill of Materials) for circuits with ratings and standards.
- Planning and Assembling of PCB, Electrical, and Mechanical parts to finish the module as a final product
- Testing and Troubleshooting of PCBs with SMDs and Through-hole devices.
- Remarkable experience in designing IoT and Ethernet circuits.
- Immense ability to design PCB enclosure by using different CAD tools
- Expert in firmware & android APP development by using different programmable languages.
- Specialist in process and instruments controllers design like pH, Conductivity, ORP, Temperature, Humidity, Flow, and TDS.
- Proficiency in designing energy monitor systems and medical devices.

Professional Skills

- ❖ Electronics Circuit Design
- ❖ Instrumentation
- ❖ C/C++
- ❖ Power Electronics
- ❖ ARM Microcontroller
- ❖ Firmware Development
- ❖ Arduino Firmware
- ❖ PCB Design
- ❖ Analogue Electronics
- ❖ IoT
- ❖ ESP32
- ❖ Digital Electronics
- ❖ Amplifiers and filters
- ❖ Integrated circuits
- ❖ CAD and enclosure design
- ❖ Android App development
- ❖ BLE
- ❖ Signal Conditioning
- ❖ Sensors & Transducer
- ❖ Simulations and testing
- ❖ Hardware Design
- ❖ Debugging circuits
- ❖ EMI & Noise Reduction

Personal Skills

- ❖ Leadership
- ❖ Team Work
- ❖ Adaptability
- ❖ Self-Motivation
- ❖ Conflict Resolution
- ❖ Creativity
- ❖ Management

Interests

- ❖ Football
- ❖ Cricket
- ❖ Coding
- ❖ Traveling
- ❖ Social Activities
- ❖ Technology

Languages

- ❖ English
- ❖ Urdu
- ❖ Pushto

Portfolio Links

<https://www.upwork.com/freelancers/~01a112e7547de6f18c>
https://www.fiverr.com/m_minhaj26
<https://www.rcbchemicals.com/electronic-s-and-instrumentation.html>
<https://minhaj.microtronictech.com/>
<https://github.com/M-Minhaj>

Employment Profile

From	To	Position / Title	Company
2014	2015	Internee	Tarbela Hydro Power,Pakistan
05-2015	To-Date	Senior Electronic R & D Engineer	RCB chemicals and services,Pakistan
8-2020	To-Date	Electronic Design Engineer (Remote)	Intoku E.U,Vienna,Austria
1-2021	To-Date	Hardware Design Engineer (Remote)	mystemcells.life
6-2020	To-Date	Freelancer	Upwork & Fiver

Projects Profile

S.N	End User/Customer	Project Name	Skills & Tools	Description
1	MyStemCells, Dallas, Texas	Back on Track	▪ BLE ▪ ESP32 ▪ Android APP ▪ EasyEda ▪ Fusion 360 ▪ FreeCad ▪ IoT ▪ Motor and actuator ▪ C/C++	R&D base project to design a medical electro-mechanical exercising device called “back on track”. The basic function of “ back on track” is to help people with back pain and make them pain-free.
2	Intoku E.U, Vienna, Austria	R&D Projects (Confidential)	▪ Circuits Design ▪ R&D ▪ Sensors ▪ BOM ▪ Firmware ▪ Technical Support	Providing technical consultancy and help in the hardware design of different instrumentation projects
3	Rt-Thread Risc-V Design Challenge, China	Energy Monitor system	▪ Esp32 ▪ Power Systems ▪ EasyEDA ▪ Arduino IDE ▪ C/C++	IoT-based project to measure household and industrial power consumption and provide a useful energy analysis and control

S.N	End User/Customer	Project Name	Systems & Tools	Description	Lunch Date
1	Rcb chemicals & services, Pakistan	pH Controller KE - pH 1000	Processor: Microchip PIC PCB Tools: Design Spark Firmware: C/C++ Simulation: Lt-Spice, Proteus	• Internal Clock • 4-20mA Output • Relays • 2-wire & 3-wire Pt1000 RTD • Auto/Manual Calibration • Adjustable Large Graphical LCD	2017
2	Rcb chemicals & services, Pakistan	Conductivity & TDS Controller KE - CD 1000	Processor: Microchip PIC PCB Tools: Design Spark Firmware: C/C++ Simulation: Lt-Spice, Proteus	• Internal Clock • 4-20mA Output • Relays • 2-wire & 3-wire Pt1000 RTD • Auto/Manual Calibration • Adjustable Large Graphical LCD	2017
3	Rcb chemicals & services, Pakistan	ORP Controller KE - ORP 1000	Processor: Microchip PIC PCB Tools: Design Spark Firmware: C/C++ Simulation: Lt-Spice, Proteus	• Internal Clock • 4-20mA Output • Relays • 2-wire & 3-wire Pt1000 RTD • Auto/Manual Calibration • Adjustable Large Graphical LCD	2017
4	Rcb chemicals & services, Pakistan	Flow Controller KE - FL 1000	Processor: Microchip PIC PCB Tools: Design Spark Firmware: C/C++ Simulation: Lt-Spice, Proteus	• Internal Clock • 4-20mA Output • Relays • 2-wire & 3-wire Pt1000 RTD • Auto/Manual Calibration • Adjustable Large Graphical LCD	2017
5	Rcb chemicals & services, Pakistan	PH Controller X1000-AW1	Processor: Stm32H7 PCB Tools: Altium Firmware: C/C++ Simulation: Lt-Spice, TINA	• Fast, Accurate, High-resolution • Programmable 4-20mA • Programmable Relays • 2-wire & 3-wire Pt1000 RTD with ATC/MTC • Auto/Manual Calibration • Password Protection, beautiful user interface.	2020
6	Rcb chemicals & services, Pakistan	Conductivity and TDS Controller X1000-BW1	Processor: Stm32H7 PCB Tools: Altium Firmware: C/C++ Simulation: Lt-Spice, TINA	• Fast, Accurate, High-resolution • Programmable 4-20mA • Programmable Relays • 2-wire & 3-wire Pt1000 RTD with ATC/MTC • Auto/Manual Calibration • Password Protection, beautiful user interface.	2020
7	Rcb chemicals & services, Pakistan	Flow Controller X1000-AW1	Processor: Stm32H7 PCB Tools: Altium Firmware: C/C++ Simulation: Lt-Spice, TINA	• Fast, Accurate, High-resolution • Programmable 4-20mA • Programmable Relays • 2-wire & 3-wire Pt1000 RTD with ATC/MTC • Auto/Manual Calibration • Password Protection, beautiful user interface.	2020

8	Rcb chemicals & services, Pakistan	ORP Controller X1000-AW1	Processor: Stm32H7 PCB Tools: Altium Firmware: C/C++ Simulation: Lt-Spice, TINA	- Fast, Accurate, High-resolution - Programmable 4-20mA - Programmable Relays 2-wire & 3-wire Pt1000 RTD with ATC/MTC - Auto/Manual Calibration - Password Protection, beautiful user interface.	2020
9	Rcb chemicals & services, Pakistan	PH Controller X2000-AW2	Processor: Stm32H7, ESP PCB Tools: Altium Firmware: C/C++ Simulation: Lt-Spice, TINA	- Dual Channel, Fast,High-resolution - IOT, WiFi, Micro SD Card,MODBUS/RTU ,USB - Programmable 4-20mA - Programmable Relays 2-wire & 3-wire Pt1000 RTD with ATC/MTC - Auto/Manual Calibration	2022
10	Rcb chemicals & services, Pakistan	Conductivity and TDS Controller X2000-BW2	Processor: Stm32H7, ESP PCB Tools: Altium Firmware: C/C++ Simulation: Lt-Spice, TINA	- Dual Channel, Fast,High-resolution - IOT, WiFi, Micro SD Card,MODBUS/RTU ,USB - Programmable 4-20mA - Programmable Relays 2-wire & 3-wire Pt1000 RTD with ATC/MTC - Auto/Manual Calibration	2022
11	Rcb chemicals & services, Pakistan	ORP Controller X2000-AW2	Processor: Stm32H7, ESP PCB Tools: Altium Firmware: C/C++ Simulation: Lt-Spice, TINA	- Dual Channel, Fast,High-resolution - IOT, WiFi, Micro SD Card,MODBUS/RTU ,USB - Programmable 4-20mA - Programmable Relays 2-wire & 3-wire Pt1000 RTD with ATC/MTC - Auto/Manual Calibration	2022
12	Rcb chemicals & services, Pakistan	Flow Controller X2000-AW2	Processor: Stm32H7, ESP PCB Tools: Altium Firmware: C/C++ Simulation: Lt-Spice, TINA	- Dual Channel, Fast,High-resolution - IOT, WiFi, Micro SD Card,MODBUS/RTU ,USB - Programmable 4-20mA - Programmable Relays 2-wire & 3-wire Pt1000 RTD with ATC/MTC - Auto/Manual Calibration	2022
13	Rcb chemicals & services, Pakistan	pH-ORP Controller X2000-AW2	Processor: Stm32H7, ESP PCB Tools: Altium Firmware: C/C++ Simulation: Lt-Spice, TINA	- Dual Channel, Fast,High-resolution - IOT, WiFi, Micro SD Card,MODBUS/RTU ,USB - Programmable 4-20mA - Programmable Relays 2-wire & 3-wire Pt1000 RTD with ATC/MTC - Auto/Manual Calibration	2022