Muzaffer Nizam
Sr. Electronic Hardware Design Engineer
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SUMMARY:

Experienced Electronic Design Engineer with over 8 years of expertise in R&D departments. Specialising in Industrial Electronics, Lift Control, Robotics, Consumer Electronics, Automotive, and Biomedical fields. Passionate about innovation and excellence, consistently delivering innovative solutions in electronic design. Proficient in addressing complex challenges and finding optimal solutions, thriving in collaborative environments with a high value on teamwork and effective communication. Seeking an Electronic Hardware Design Engineer position with an established and growing company.

EDUCATION:

Oct' 2016 — **Bachelor of Science in Electrical & Electronics Engineering**
Akdeniz University - Antalya, Turkey
https://www.akdeniz.edu.tr/en

WORK EXPERIENCE:

Jul. 2023 – Present — **GMT Industrial Electronic Ltd. - Istanbul, Turkey**
https://www.gmtcontrol.com/
Sr. Hardware Design Engineer
Projects: Programmable Logic Controllers (PLC)

Apr. 2022 – Jun 2023 — **Acri Industrial Ltd. -Antalya, Turkey**
https://www.acritechnology.com/
Sr. Hardware Design Engineer
Projects: Lift BLDC Door Control Driver, Tracker Fault Errors and Remote Control with LTE, Lift Main Controller, Test Machine Main Board for Manufacturing.
***Not:** Acri Industrial is part of Ake Elevator & Escalator Ltd.*

Feb. 2021 – Apr. 2022 — **Ake Elevator & Escalator Ltd. -Antalya, Turkey**
https://ake.com.tr/
Sr. Hardware Design Engineer
Projects: Lift DC Door Control Driver, Tracker Fault Errors and Remote Control with GSM, Lift Cabinet Button Main Board, Top and Bottom Lift Cabinet Control and Communication Boards, Lift Calling Boards, Water Vending Controller, Doppler Radar Sensor Board for Escalator.

May. 2018 – Feb 2021 — **Desird Design R&D A.S. -Antalya Turkey**
https://desird.com/en/
Mid. Hardware Design Engineer
Projects: Test Machine Main Board for Manufacturing, Lift BLDC Door Control Driver, Linear Motor Projects for Lifts, Railway Peron Separator using BLDC Door Driver with Safety Relay (SIL-2 certified).

Aug. 2015 – Oct 2017 — **Desird Design R&D A.S. -Antalya Turkey**
https://desird.com/en/
Jr. Hardware Design Engineer
Projects: Lengthening Nails (Biomedical), IoT projects (Consumer Electronics), Telemetry Projects (Energy Services), Test Machine Main Board for Manufacturing, Lift DC Door Control Driver.

Jul. 2013 – Sep. 2013 **Turkcell Communication A.S. -Antalya, Turkey**
https://www.turkcell.com.tr/
Intern Electrical & Electronic Engineer
Projects: GSM Base Station Location Planning, Analysis of GSM Signals.

Main Responsibilities:

- **Idea to Mass Production Development**: Schematic design, PCB layout, prototyping, testing, and optimisation of HW subsystems for ARM-based and FPGA based platforms.
- **Using SPICE Simulations**: Utilising SPICE simulations for analogue and digital circuit analysis.
- **Hardware Verification with Firmware**
- **Using Various Coding Methods**: Employing various coding methods including polling and interrupt modes for STM32xx..
- **Coding**: Timers, DMA, PWM, UART, CAN Bus, DAC, ADC, general input, and output for STM32xx.
- **Functional Testing and Measurement**: Conducting functional testing and measurements with oscilloscopes and other tools.
- **Analysis:** Performing analysis including Eye Diagram, Crosstalk, Impedance, Reflection, PDN, ERC, DRC, DFM, PBA, Signal Integrity,
- **Physical Layer Design**: Analysis and integration of co-located wireless subsystems including WLAN, GNSS, cellular (3G/LTE), Bluetooth, Sub 1 GHz, 433 MHz RF.
- **Design and Testing**: High precision ADC circuits, active and passive filters, anti-aliasing filters, gain amplifiers, and current monitoring with instrumentation amplifiers such as the INAxx IC series to achieve better performance in EMI & EMS (radiated and conducted).
- **Switching Regulator and PMIC Design**: Buck/boost converters and calculation of power consumption.
- **Interface Design**: SPI, Quad SPI, I2C, USART, UART, and absolute encoder hardware interfaces.
- **Communication Protocols**: CAN Bus, RS485, RS232, and Ethernet layer design (using KSZ series ICs or integrated Ethernet controllers in Texas Instruments TM4C series MCUs).
- **Motor Control Driver Design**: DC, BLDC, PMSM motor control drivers, discrete designs or IPM modules.
- **PCB Layout Design**: Rigid/flex 1-6 layer boards (Altium, KiCad), optimised for RF, high-speed digital, EMC/EMI, IPC Standards and thermal performance.
- **Preparing Documentation**: Bill of materials, Gerber files, Pick & Place, DXF & STEP files for mechanical design.
- **Component Selection**: Choosing any components, PCB materials, surface plating, and stencil thickness based on project requirements.
- **HW Team Lead**: HW Team Lead: Overseeing team workload and deadlines, mentoring junior engineers.

SKILLS:

Programming Languages:	C (Mid-High level), VHDL (basic level)
Operating Systems:	GNU/Linux operating systems (Ubuntu, etc),Windows
Version Control:	Gitlab, Github,
Software:	Altium Designer, Kicad, STM32CubeIDE, VS Code, Eclipse, Matlab Simuling, LT Spice,
Libraries:	STM Hal Libraries, Custom Kicad and Altium CAD libraries (Symbol&Footprint),
Hardware:	ARM Microcontrollers (STM32, CC13xx, MSP43xx, TM4Cxx, c), FPGA (Efinix Trion Series), GSM/GPRS/GPS modules (Quectel MC60, Quectel EG-25 Series, SIM800xx, etc) WiFi, Ethernet and Bluetooth chips (ESP32, ESP8266 etc)
Language:	English (B2 level), Turkish (native)
Certificate:	TUV Nord Safety Integrity Level for Railway System Electronics -2019 British Culture Language Schools -Antalya,Turkey -- -2023 English Language B2-Upper Intermediate Certfcate Code: 8882201740 *https://verfedportfolos.com/*

PROJECT:

BLDC Motor Control Board For Industrial Solutions

- ***Power Input;*** *24 VDC (Bus Voltage Read) ,*
- ***Communication;*** *USB Micro B,*
- ***Programming;*** *Debug Connector,*
- ***Digital Inputs;*** *Can Bus, RS485, Encoder Interface, User Button,*
- ***Monitoring;*** *7 Segment Display Leds with Shift Register IC,*
- ***Analogue Inputs:*** *Potentiometer ,*
- ***Output:*** *U,V,W phase BLDC/PMSM/DC Motor*
- ***Motor Control Design:*** *Discrete Design using Mosfet Driver IR21xx and Power Mosfets,*
- ***Motor Control Feedback:*** *Reading Current with Differential Op-Amps (Back EMF Solutions) & Encoder Interface*
- ***Detection;*** *High Current, Low Voltage, High Voltage,*
- ***PCB:*** *4 Layers*

For more information on this project: ***https://github.com/muzaffernizam/STM32-Motor-Control-BLDC-24V***

Some another projects: ***https://github.com/muzaffernizam/My-Projects***

Hobbies:

Latin Dances; Salsa & Bachata (Intermediate-Advanced level)