Shoaib Khan

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Objective

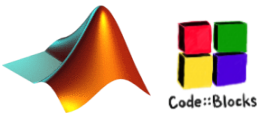
Experienced Electronics Engineer with a solid foundation in design and manufacturing, formerly at NEXTEK. Now excelling as an Embedded Firmware Design Engineer at Devomech Solutions, I specialize in enhancing electronic devices with advanced firmware solutions. Proficient in C, OOP, and C++, I am keen to apply my skills in a dynamic environment and contribute to innovative technology projects.

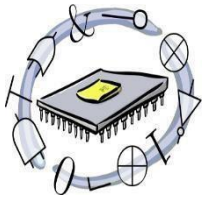
Education

Bachelor of Electronics Engineering, UET Peshawar CGPA: 3.3

- Graduated in September 2022

Skills





- Proficiency in embedded firmware development, including real-time operating systems (RTOS).
- Expertise in designing and optimizing embedded systems for various microcontrollers and processors, particularly ESP32 and Arduino.
- Intermediate programming skills in C/C++ efficient and low-level system control.
- Familiarity with communication protocols such as SPI, I2C, UART, and CAN, crucial for embedded system interfaces.
- Beginner level knowledge and experience with hardware description languages, including VHDL and Verilog, for FPGA design and development.
- Have debugging and problem-solving skills, adept in using oscilloscopes, logic analyzers, and in-firmware debuggers to troubleshoot hardware and firmware issues.
- Excellent time management and project leadership abilities, with experience leading cross-functional teams to meet project deadlines and specifications.
- Effective communication skills, capable of translating complex technical concepts into clear, actionable information for team members and stakeholders.

Professional Experience

Trainee Embedded Firmware Design engineer at Devomech Solutions

As an Trainee Embedded Firmware Design Engineer at Devomech Solutions, I develop and fine-tune firmware for diverse embedded systems, focusing on C++ and C. My role involves designing firmware, integrating hardware components, and ensuring system reliability. I collaborate with teams to advance product development from concept to deployment, delivering innovative and efficient solutions.

Design engineer at NEXTEK services

As an Electronics Design Engineer at NEXTEK Services, I specialized in developing advanced electronic devices, with a focus on circuit design and programming in OOP and C++. A highlight of my tenure was leading the Digital Video Recorder (DVR) Tester project, where I developed solutions for accurate voltage recording. This role showcased my ability to design, program, and optimize electronic circuits, enhancing my skills in troubleshooting and project execution.

Apprentice, Pakistan Railway **Project: Lodhran to Shahdrah**

During my apprenticeship at Pakistan Railways, I played a vital role in a significant project to replace the outdated signalling system from Lodhran to Shahdrah. This experience honed my skills in project management, problem-solving, and teamwork. I leaned about the latest and the advanced signaling system that is Computer Based Interlocking (CBI) system. I gained hands-on expertise in implementing modern signaling solutions, illustrating my ability to adapt and contribute effectively to large-scale infrastructure projects.

Other Projects

Final year project

The project focused on simulating the creation of a brain-controlled robotic hand with haptic feedback. Brain signals were converted into electrical impulses to control virtual prosthetic hand movements. A user-friendly control unit interpreted hand movements through potentiometers, translated into servo actions. Realistic haptic feedback was simulated using sensors to mimic object weight. The integration of this feedback enhanced user experience, laying a foundation for future brain-controlled prosthetics development.

Semester projects

- **Projects on Arduino:** Successfully designed the automatic door lock system that utilizes sensors **(RFID)** to detect human presence and automatically locks or unlocks the door accordingly. It offers enhanced security and convenience by eliminating the need for manual operation. Additionally, engineered an automatic system to manage water resources effectively, improving usage and conservation.

- **C++ projects:** Successfully completed several C++ projects including designing a library management system and coding an ATM machine

- **Projects on FPGA:** In these FPGA projects, I focused on implementing diverse logic equations and combinations. Leveraging the Spartan-3 FPGA board, I translated these logical constructs into hardware, utilizing its capabilities to their fullest. I employed LEDs on the board to visually validate the outcomes, while also employing the board's switches to meticulously verify the logic combinations.

- **ALU design:** Developed an arithmetic logic unit (ALU) including its timing diagrams using ModelSim

- **Speaker Redesign:** Redesigned the speaker from different raw circuits, increased output efficiency

Languages

- English: Fluent
- Urdu: Native