SALEHA SHAIKH

+91-7984521579
salehabibishaikh786@gmail.com

OBJECTIVE

To work enthusiastically and to apply my skills to deliver the best through smart work, research and to grow by exploring modern technologies.

EDUCATION

B.TECH (ELECTRONICS & COMMUNICATION)
8.0 CPI (Upto 6th Semester)
Institute of Technology, Nirma University, Ahmedabad

HSC | 85.6%
Kendriya Vidyalaya E.M.E No. 2, Vadodara
Central Board of Secondary Education

SSC | 9 CGPA
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Central Board of Secondary Education

TECHNICAL SKILLS

- Programming Languages: C, C++, Assembly language
- Hardware Description Language: Verilog
- Software Packages:
  - Altera Quartus-II
  - Arduino IDE
  - MATLAB
  - Keil µVision
  - Microwind
  - Multisim-Ultiboard
  - Android Studio
  - MASM
  - WYSIWYG Web Builder
- Hardware Familiar With:
  - Raspberry Pi
  - Altera DE-2 FPGA development kit
  - Arduino UNO development kit

PROJECTS UNDERTAKEN

- Smart Agriculture System Using Raspberry Pi (Ongoing):

An automation system is targeted for farmers to aid them in monitoring their crops and field, for automating every day processes like irrigation and making them more efficient by taking information from various sensors, processing them on a web server developed using **Raspberry Pi**, which acts as a web portal for end-users as well as an intelligent system which takes decisions based on the sensor information with the help of actuators.

The system has been setup in a local network and is subsequently aimed to be published on the internet, providing remote access to end-users from anywhere in the world. Separate user interfaces for an end-user and an administrator, both via login features on the website/app are to be developed. A mobile application is developed which interacts with the web server to view sensor information as well as to manually control actuators remotely. **LAMP** and **WYSIWYG** were used for developing the web application.

- CMOS SRAM Design (Layout and Simulation):

1-bit CMOS SRAM (6 MOSFET design) layout design and simulation was performed in Microwind using **120nm technology**.

- FPGA Implementation of Asynchronous FIFO:

An **8-bit asynchronous FIFO** was designed using **Verilog** and was tested against all corner cases such as overflow and underflow. The same was implemented on Altera DE-2 FPGA development kit (Cyclone-2 EP2C35).

- Sensor Integration with Arduino & Bluetooth Mobile Application Development:

MCU6050 sensor module (accelerometer, gyroscope and temperature sensor) was explored and interfaced with Arduino UNO. A mobile application was developed to receive sensor data from Arduino over Bluetooth.

- A Project on 'Strobe Effect':

The strobe effect is a visual phenomenon caused when a continuous motion is sampled as sets of discontinuous frames. In this project LED lights were flashed on falling water droplets with certain frequency to create an illusion of droplets rising against gravity. Large number of LEDs were switched using **high speed BJTs (BC547)** and **Arduino UNO**.

- 3D POV Globe:

1D Array of LEDs controlled using Arduino and shift registers are mounted on a DC motor, when rotated at a high enough speed, it gives the effect of 3-D display by 'persistence of vision' phenomenon. 3D patterns were designed and passed to the shift registers serially, keeping in mind the motor RPM, to create 3D visualizations using 1D array of LEDs.

- A **seminar** was delivered on the applications of **'Internet of Things'** in medical applications, agriculture, home automation and industrial applications. Current market/technology analysis was performed and future scope was discussed in the seminar.

- Buzzer design used in quiz competition was designed using **AT89C51 microcontroller (8-bit)**. The number allotted to the candidate pressing the button first is displayed on a 7-segment LED interfaced with the microcontroller.

- A simple **LDR based mechanism to detect day/night conditions** was designed. LM358 op-amp was used as a comparator (1-bit ADC) for thresholding LDR output to decide if it's day or night.

- A theory report on **VLIW** was presented, discussing the motives behind transitioning from superscalar architecture to **VLIW (Very Long Instruction Word)**. Software complexities involved in VLIW were discussed and 'loop unrolling' mechanism was discussed for the same.

- A Theory Report On 'RISC-V' was presented. RISC-V architecture was discussed along with the several types of OS used in the architecture. Features and characteristics of OS, and in-development OSs for RISC-V were discussed in the report.

INTERNSHIPS

- **Doordarshan (Vadodara, Gujarat)**
  The training involved understanding signal broadcasting and the different techniques involved in communicating the signal and those techniques of sending audios and videos in analog and digital format.
- **Advance Electronic System (Vadodara, Gujarat)**
  The company provides TRUs used for cathodic protection, which is used to protect pipelines when the coating of paints gets damaged. The training involved study and exploring the same.

CAMPUS INVOLVEMENT

- Technical Head at Electronics and Communication Organization, Nirma University
- Indian Society of Technical Education (ISTE)

CO-CURRICULAR ACTIVITIES

- Participated in technical events organized by NU-TECH.
- Assisted the coordinator of Faculty Development Program on “Embedded System Design”, which was conducted by Department of Electronics and Communication(EC), Institute of Technology, Nirma University.
- Presented POV Globe and Strobe Effect projects on ECO Day.

EXTRA CURRICULAR ACTIVITIES

- Community Service at Ahmedabad under Make a Difference (MAD) Foundation
- Regional level volleyball player.
- Campaign Ambassador for ‘PROJECT SAARTHI’, an initiative by the RIGHT TO EDUCATION RESOURCE CENTER, IIM Ahmedabad.
- Participated in Mini Marathon, held at Karnavati Club, Ahmedabad.