Syeed Mohd Ameen

https://syeedameen.github.io/

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Education

Master of Technology in Software Engineering — Nov 2021 - Nov 2023
Aligarh Muslim University (AMU), ***CGPA: 7.77/10.0*** — *Aligarh, India*

- **Relevant courses**: Advance Computer Architecture, Machine Learning, Image processing and Computer vision, Big Data Analytics, Numerical and Statistical Techniques

Bachelor of Technology in Computer Science and Engineering — Jun 2017 - Jun 2021
Rajasthan Technical University, ***percentage: 68.01*** — *Kota, India*

- **Relevant courses**: Data Structure, Operating System, Design & Analysis of Algorithm, Data Base Management System, Compiler Design, Embedded System, Distributed System.

Key Academic Projects

- **miniflight: Budget flight controller for drone using ATmega328p microcontroller** - repository

  A budget flight controller for drones using the ATmega328P microcontroller offers an affordable yet efficient solution for controlling the flight dynamics of drones. Designed with cost-effectiveness in mind, this flight controller provides the essential features required for stable flight control while utilizing the capabilities of the ATmega328P microcontroller.

- **AT89S52: A SPI Programmer that can program AT89Sxx series of Microcontrollers** - repository

  Existing programmers of AT89Sxx series of IC's are costly and very messy to use, so we design and develop a simple easy to use programmer that can program AT89Sxx Series of IC's. (simple drag and drop hex file in serial terminal program)

- **Smart City Integration using google voice kit**

  I led the creation of a web-based smart city monitoring system, integrating various sensors and databases using MySQL. My specific role involved implementing the Google Voice Kit for efficient voice message broadcasting, contributing to a comprehensive solution for online smart city monitoring.

- **8051 FPU: Fast Floating Point Subrountines support for 8051 Microcontroller** - repository

  Designed and implemented Fast Floating Point Subroutine for the 8051 microcontroller, enhancing its computational capabilities with efficient IEEE 754 floating-point arithmetic for high-speed and precise calculations in resource-constrained environments.

Research Experience

M.Tech Thesis: Energy efficient heterogeneous multi-core architecture for edge computing devices

Thesis Conducted a comprehensive analysis of microcontrollers, emphasizing efficiency and low-power attributes for sensor node applications. Executed extensive experimentation on ATmega328p, ATmega8A, ATmega16A, and RP2040 dual-core microcontroller, utilizing CoreMark benchmarks and deep characterization techniques. Developed a wireless sensor node system with HC-05 Bluetooth Module and BMP280 sensor, employing SPI and I2C protocols. Strategically selected AVR series microcontrollers for benchmarking, showcasing the RP2040's superior performance—59.35% less energy consumption and a 16.11% reduction in completion time compared to existing FPGA-based sensor nodes. Illustrated the developmental journey from initial breadboard setups to the final PCB design, demonstrating a systematic and practical implementation of the sensor node. This research, emphasizing both theoretical evaluation and practical deployment, contributes valuable insights to the embedded systems and IoT applications field, guiding optimal low-power SoC selection for sensor nodes.

B.TECH Project: (High level Assembler for MCS-51 ISA)

An advanced assembler for MCS-51 architecture to enhances programming by supporting custom instructions beyond the standard ISA, seamlessly replacing them with MCS-51 equivalents during assembly. It intelligently substitutes simple functions with predefined macros, streamlining code development, optimizing efficiency, and reducing redundancy. This automation allows programmers to concentrate on high-level logic without manual macro management, resulting in a more efficient and readable workflow for MCS-51 programming

AMURoboclub Aligarh, IN

PG Representative *Jun 2022 - Jun 2023*

- Taking various workshops on (STM32, Arduino, Raspberry pi) development board.
- Supervise different projects group in the lab.
- Manage ABU Robocon (Asia Pacific Robot contest) team as leader and mentor.

AIET Robotics Lab Jaipur, IN

Software Engineer *Jul 2018 - Feb 2019*

- Develop flight controller firmware using STM32 AVR series of microcontroller (all the low-level subroutines written in assembly language in order to optimize every single byte and performance).
- Testing and debugging the raw data of accelerometer, gyroscope.
- Design flight controller PCB on Eagle EDA software.

PUBLICATIONS

- **Accepterd** : Saeed Akhtar, ***Syeed Mohd Ameen*** and Dr. Rashid Ali, "Predicting the Surface Elastic Parameters of Soft Solids using Multi-Output Decision Tree Regressor", 2023, Planned book chapter in Elsevier's book Data Science in Medical Field.
- : ***Syeed Mohd Ameen***, Yunus Kathat, Sunny Kr Shah, Kapil Kr Jangid, Ritika Sharma, "Implementation Graph Search Technique on A Navigation Line Follower Robot" IJSRED-V4I4P103 Page(s): 731-735

Skills

- **Languages**: C/C++*(advance)*, Java/python *(Intermediate)*
- **Softwares** : Android Studio, Arduino IDE, Visual Studio
- **Framewroks/libraries** : Tensorflow, NumPy, Pandas, matplotlib
- **Web** : HTML, CSS, JavaScript, Django, flask
- **Communication protocols** : I2C, SPI, UART, Zigbee, Bluetooth, 802.11
- **Programmable devices** : AVR, PIC and ARM – based microcontrollers, EPS32, Raspberry pi RP2040
- **Database** : MongoDB, MySQL
- **Instruction set architecture** : x86, AVR, RISC-V, MCS-51, 6502 *(Assembly languages)*
- **EDA** : KiCad (PCB schematic and board layout designing)

personal Information

- Address - Ghaffar Manzil Colony, Jamia Nagar, Okhla, New Delhi, Delhi 110025
- Nationality - Indian
- Passport Number - **Y6711248** (Valid up to 2033)