Shashank Simha Mysore Ramesh
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Education

- **Technical University of Munich** — Munich, DE
  Master of Science in Communications and Electronics Engineering; CGPA - 1.7/4.0 (Max 1.0) — *Oct. 2023 – present*
- **The National Institute of Engineering** — Mysore, IN
  Bachelor of Engineering in Electronics and Communication; CGPA - 9.08/10.0 (Max 10.0) — *Aug. 2016 – Aug. 2020*

Experience

- **BSH Hausgerate** — Munich, DE
  Working Student: IoT Architecture — *Oct. 2023 to present*
  - **Home Connect Platform**: Working on OEM reference application for Home Connect Infrastructure. Simulating Home Appliance and Backend on Raspberry Pi for customer demonstration and documentation.
  - **Matter appliance**: Integrating matter specification with custom home-connect appliance (using ESP32 and Raspberry pi for demonstration)
- **Qualcomm** — Hyderabad, IN
  Engineer: SoC Power Optimisation — *Jan. 2022 to Sep. 2023*
  - **Hibernate and Deepsleep Features**: Developed Power saving features for SoCs and ported the same across various platforms with different Hardware and Software (Linux Android, Custom Embedded Linux based on Yocto *etc.*) Architectures.
  - **Power-walk and Debugging**: Contributed to Root cause analysis of system and rail level power consumption on SoCs with Breakup Sheets.
- **PathPartner Technology** — Bangalore, IN
  Software Engineer: Embedded Systems — *Jan. 2021 to Jan. 2022*
  - **Android Linux**: Developed Audio Features for Mobile/Television Devices (based on Qualcomm and MediaTek chipsets) and ported the same across different Android (AOSP) Versions.
  - **DSP Integration**: Implemented APIs and tools for communicating with DSPs on the system (internal and external).
- **Indian Institute of Science (IISc)** — Bangalore, IN
  Research Intern — *Jan. 2020 to Jan 2021*
  - **Robot design**: Worked on Design, Assembly and Programming of Delta bot (3 degree of freedom) and Omni Directional bot.
  - **Multi Robot Environment**: Proposed a multi-core simplex architecture for security in Multi-Robot Environment. Developed a platform (with Zabbix) for storing and monitoring various performance parameters which could affect security.
- **Indian Institute of Science (IISc)** — Bangalore, IN
  Summer Research Intern — *Jun. 2019 to Jul. 2019*
  - **Trilateration algorithm**: Worked on Implementation of Trilateration algorithm (based on RSSI) on TI-RSLK.
  - **Self Localizing Robot**: Developed a self-localizing robot using Robot System Learning Kit and Zigbee modules.

Leadership Experience

- **Mysuru Hub Incharge – IEEE Bangalore Section SAC**: Led and coordinated collaboration events between 5 student branches in Mysore consisting of over 750 students.
- **Vice Chairperson – NIE IEEE Student Branch**: Led a team of 13 members, organizing over 70 events and 4 technical fests. Developed 2 Android apps and a Website for Events.
- **Student Coordinator – IEEE India Council**: Been a part of Student Co-ordination Team, Worked for Online Training and Webinar team, Led the website team for AISYWC'19.
- **Webmaster – IEEE 5G World Forum**: Managed the website of 5G world forum for the year 2020.

Engineering Skills

- **Embedded Systems:**
  - ***Microcontrollers and Microprocessors:*** Beaglebone, Altera FPGA, Raspberry Pi, STM 32/8, Arduino (Atmega), ESP 8266/32, 8051, x86
  - ***Programming Languages and Tools:*** Assembly, Embedded C, Verilog HDL, VHDL, System C, MicroPython, Keil uVision, KiCad
  - Android Linux and Linux Device Driver Development, Android/Embedded Audio Frameworks
  - Real Time Operating Systems and Communication Protocols
- **Computer Programming:**
  - ***Programming Languages:*** C, C++, Python, PHP
  - ***Computer Networks (IP Networking):*** NS2, GNS3
  - Full Stack Web Development & Android Application Development

Projects

- **Adaptive Embedded Control System**: Implemented an Adaptive Fuzzy-PID Control System for controlling various parameters of an industrial Furnace. Implemented a Wireless Sensor Network for Data aggregation and processing.
- **ECG Data Reduction Algorithms**: Implemented AZTEC, TP and DCT algorithms for reducing the size of ECG data without losing essential information.
- **Smart Speed Governor**: Developed an IoT application to limit the maximum speed of a vehicle in real-time based on the traffic intensity in a particular locality.
- **FreeRTOS Projects**: Implemented various features of FreeRTOS on ESP32 microcontroller.
- **NIE Summer of Code (Projects on ESP 32)**: Built Projects like Web server, Bluetooth SD card reader, Remote Temperature logger, OTA, Web Client, etc., using ESP 32 and SD card module.
- **Operating Systems: Scheduling Algorithms**: Implemented FCFS, SJN, Round Robin and Priority based scheduling algorithms. Simulated OS processes to compare the performance of individual algorithms.
- **QM solver**: Developed a command line application (written in Python) to find minimal expressions for digital circuits by implementing Quine Mcclusky Algorithm.
- **Presenter**: Developed an Android app for remotely controlling presentations built using RevealJS (Integrated with Google Firebase).

Achievements

- **Oustanding Student Volunteer**: IEEE India Council (for the year 2020)
- **Oustanding Student Volunteer**: IEEE Bangalore Section (for the year 2019)
- **Best Website Award**: AISYWC'18
- **Secured state wise 2nd rank**: National Means cum Merit Scholarship Exam (2011)

Workspaces

- **GitHub**: github.com/shashank-simha
- **Personal Website**: simha.me

Languages

- **English**: C1 *(IELTS: 8.0)*
- **German**: A1 *(Goethe Institute)*