Mohammed Laeeq Shaikh

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Summary

- Working with **Wipro** as a **Senior Software Engineer**, with **Cisco** as client. Work is on Cisco's line of products namely **Cisco Meeting Server** ie CMS 1000 and CMS 2000. These are secure, on premise-based video, audio, and web communication technologies and products. Involved in design, development, deployment, release and maintenance.

- Diverse work experience **(11 years)** across IT industry **(7 years)** and academia **(4 years)** alike. Both domestic and international, in multicultural, challenging Agile environments. From roles of Software engineer, to Researcher alike.

- Skills and Experience in development of Firmware, Device Drivers, Embedded Applications etc with Embedded Linux, RTOS over AVR, ARM, RISC, Intel x86 platforms.

- Skills in **Python (Beginner)**, **C (Advanced)**, **Embedded Linux (Advanced)**. Exposure to complete SDLC and Agile processes, Scrum, Kanban, TDD and GIT version control with many open source frameworks and libraries.

Technical Skills

Product: Embedded Systems, Embedded Software, Embedded Linux, Buildroot, Yocto, Secureboot

Languages: C, Embedded C, Python, BASH Shell scripting, LaTeX, Assembly, RUST

Hardware: 8051, AVR, ARM, BlackFin, x86, RISC-V **Platforms**: Arduino, Rasberry Pi

Protocols: TCP/IP, UDP, UART, USART, SPI, I2C, USB, CC2500, WiFi, ZigBee, 802.x, CAN, Ethernet, FlexRay, network drives, and various protocol stacks in IR 4.0 and in IOT, IOT-Ops, IOT-OS

Software Frameworks and Libraries: MATLAB, GNU Octave, GIT, OpenCV, OpenCL, H.264, H.265, OpenMP, various open source libraries and frameworks

Operating System: Ubuntu, Debian, Red Hat Linux RHEL 4/Fedora, Android, Embedded Linux, uClinux, Vmware EXSI, Virtualbox

Cloud: AWS, GCP, Azure, Docker, Kubernetes, GIT, Containers, JIRA, GitHub, GitLab, Bitbucket, Jenkins

Proficiency

Product: **Board bring up(4/5), Linux Kernel internals(3/5), Secureboot(5/5)**

Programming: **C (5/5), Python (4/5), BASH (4/5), C++ (2/5)**

OS: **Linux (5/5), Embedded Linux (5/5), Android (5/5)**

Cloud: **Docker (4/5), Google Cloud (3/5), AWS (3/5), Azure (3/5), Kubernetes (3/5)**

Soft-skills: **Communication skills (5/5), Mentoring (4/5), Workshops (4/5), Leadership (3/5)**

Work Experience

Wipro (parent) Cisco (client) Bangalore, India
Senior Software Engineer **32 months** | May 2022 - till date

- My role is of a Senior Software Engineer. The underlying work is on Cisco UCS (Unified Computing System) and on Cisco's line of products especially CMS (Cisco Meeting Server), namely CMS 1k, CMS 2k. and CMM (Cisco Meeting Management).
- Leading design, development and maintenance with the Platform team. Responsibility is on the build side, OS, Linux kernel, device drivers, middleware libraries up-gradation, application support etc.
- Optimizing performance, Benchmarking, security and qualification of CMS1k, CMS2k, with test cases. Resolving numerous JIRA tickets for bug fixing, security, CVE, and up-gradation tasks as well.
- Knowledge and skills on: **Virtualization**: Docker, Container, Hypervisor **Programming**: Buildroot, Linux, C, Shell **Build**: Jenkins (private builds and release builds), Git: bitbucket,GitHub, Cisco UCS server, and CM-ATC (Resources and Test automation) **Libraries and Tools**: Ansible, Jira, Vmware EXSI, Embedded Linux, OpenSSL, OpenSSH, CiscoSSL, CMS-GCC-toolchain, etc.
- Leading SecureBoot feature implementation right from Bootloader (encryption Uboot, Grub), to kernel (encryption with certificates), to application. End goal being a secure CMS platform.

MIT (Maharashtra Institute Of Technology) Aurangabad, Maharashtra, India
Assistant Professor **25 months** | March 2016 - April 2018

- I was working as an Assistant Professor in the Department of Electronics and Telecommunication. Responsibilities include Academics, Administration and Research activities.
- I was teaching the courses of ETC421: Advanced Embedded Systems Design, and ETC320: Radar and Satellite communication. I was a part of numerous internal committees, like start-up and innovation committee, IQAC, robotics club (MITRA), IPR and in house research etc.
- My most notable achievements include patents in the domain of IOT, 5G and UAVs which was well appreciated by the management. Helped students for project competitions. Engaged with Electronics, Mechanical, Computer science, thus enabling true inter-disciplinary projects.

TU Ilmenau Germany Ilmenau, Thuringia, Germany
PHD Researcher **18 months** | Sept 2013 - March 2015

- I was working as a PhD student in the graduate school in mobile communications (GS MOBICOM), TU Ilmenau, Germany
- My work was at the intersection of Embedded Systems, Digital Communications, and Artificial Intelligence, the topic being "Self Organized Multi UAV Message Ferrying".I had to discontinue as our graduate school was dissolved due to the cancellation of funding.

mAmigo Inc. (Now Seastar) Bangalore, Karnataka, India
Software Engineer **7 months** | May 2012 - November 2012

- I worked with mAmigo Inc. as a Software engineer on embedded projects. Primarily involved in IRIS based bio-metric security device. The product was highly successful and deployed widely across Fortune 500 companies, worldwide
- Implementing Board bring up: From boot loaders, kernel images of Linux & uClinux, device drivers to end applications, using build management tools like OE ie Open embedded, buildroot etc. on ARM and Blackfin platforms

- Implementing Application porting and diagnostics involving various peripherals like Timers, USB, SD MMC, Audio, Camera etc. using numerous open source libraries and frameworks. Boot time optimization, securing the device (offline and online) and bench marking performance of devices and peripherals under various test loads.

EasyARM Bangalore, Karnataka, India
Founding Employee **16 months** | Dec 2010 - April 2012

- Along with my MS studies, chased my dream of creating a company from scratch. I was the very first employee of EasyARM.
- Initially, started with training's in Linux, Android and ARM verticals. Intensified efforts and went in detail of these 3 focus areas. Designed Workshops included practicals and hands on labs. Conducted workshops for students, working professionals and leading corporate companies in the Embedded space.
- Conceptualized and executed many plans at a technical and management level, achieved numerous milestones along the way. It was successfully acquired by Phytec Gmbh (Germany) PS refer www.easyarm.com, www.easyarmlabs.com

ThinkLABS Technosolutions Pvt. Ltd. SINE IIT Bombay, Mumbai
Technical Associate R&D **18 months** | January 2009 - June 2010

- I worked with ThinkLABS (SINE, IITB) initially as an intern followed by a full-term employment as a Technical Associate. Our focus was in Robotics and Embedded Systems. Being involved in the design, development, test and improvement phases both hardware and software of flagships products of the company namely iPitara, CiMPLE, and uNiBoard
- Ported uCOS and developed other applications on uNIBoard along with a team. Conducted numerous workshops, and activities for long term Embedded Training especially with RTOS (uCOS 2).
- Developed and conducted numerous Robotics workshops and Embedded educational trainings, all across the country right from an engineering college level to the corporate level
- Developed and tested along with a team the back end libraries of peripherals, memories, wireless modules (CC2500) on the Atmega family. These were used in products of iPitara, CiMPLE and uNiBoard.

Projects

Master Thesis work Bangalore
Design and Development of an Efficient H.264 Video Encoder for CPU/GPU using OpenCL 7 months | September 2011 - March 2012

- In this Thesis an efficient H.264 video codec is developed using OpenCL for multicore architectures based on the x264 open source H.264 library
- The x264 library is profiled using sample videos on a CPU and performance hotspots are identified for optimisation. These hotspots are optimized by means of encapsulation into the OpenCL kernel loops where 4 parallel threads are created by OpenMP. Further, compiler optimization flags and assembly instructions within the x264 library are used to improve memory efficiency and execution speed
- **Tools used**: C, grpof, x264, H.264, Assembly, OpenCL, x86, Ubuntu Linux

Masters group Project Bangalore
Design and Implementation of On-board Moving Target Detection, Tracking and Navigation 6 months | December 2010 – May 2011

- The objective of this project is to detect objects using computer vision techniques in real time. The project consists of two entities, an on board Image processing module and a Robot navigation module

- The algorithm used is Optic flow based Horn Shaunk algorithm. The application is written in OpenCV and cross compiled for ARM architecture
- **Tools used**: Leopard board (TI OMAP ARM), OpenCV, x86, UniBoard, AVR, Ubuntu Linux

Education

Dr. Babasaheb Ambedkar Marathwada University Aurangabad, India
B.Tech in Electronics and Telecommunication Engineering **May 2005 - May 2009**
77% Distinction, 3rd in a class of 80 students

MSRSAS (Bangalore) Affiliated to Coventry University UK Bangalore, India
M.S. [Engineering] in Real Time Embedded Systems **Sept 2010 - May 2012**
Grade: Merit

Universiti Teknologi Malaysia Johor Bahru, Malaysia
PhD (AI for V2X communications) from UTM Malaysia (Pursuing) **April 2019 - till date**
My work is on the topic of AI for V2X communications. Particularly focused on Optimization algorithms for Vehicle platooning in Multi-lane Heterogeneous Dynamic environments.

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