RACHIT THUKRAL
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OBJECTIVE

To work in a position where my skills as Team Leader in Embedded system and Internet of Things (IoT) can be utilized for the society and increased.

EDUCATION DETAILS

QUALIFICATION	SPECIALIZATION	SCHOOL/COLLEGE (BOARD/UNIVERSITY)	YEAR OF PASSING	PERCENT /CGPA
M.TECH	Embedded Systems Design	NIT Kurukshetra	2014	7.66 CGPA
B.E.	Electronics and Communication	BMIET, Sonepat (MDU, Rohtak)	2010	72.32%
XII	Non-Medical	Rishikul Vidyapeeth, Sonepat (C.B.S.E.)	2006	81.6%
X	NA	Rishikul Vidyapeeth, Sonepat (C.B.S.E.)	2004	75.8%

Additional Qualifications:

- 6 weeks training in Embedded Systems and Robotics from PLC institute of electronics.
- 6 weeks training in Industrial Automation Engineering from Sofcon India Pvt. Ltd.
- Gate qualified in 2012

WORK EXPERIENCE

1. **Director and Founder** (September 2017 to present) – ETI Labs Pvt. Ltd.
   Role: Team Leader in Design & Development of various products, Conducting and organizing various trainings/workshops, Dealing with customers' requirements and providing solutions.
2. **Embedded Developer** (Dec 2017 to May 2018)
   Employer – Cubical Laboratories Pvt. Ltd.
   Role – Firmware development, Hardware development
3. **Pre-Incubation Fellow**, Design & Innovation center, **MHRD** (Aug 2015 to Nov 2017)
   Employer – Indira Gandhi Delhi Technical University for Women
   Role – Developed microcontroller boards, add-on boards and raspberry-pi based sensor kit, organize trainings and workshops for students and faculties, management works related to project
4. **Embedded Engineer** – (Feb 2015 to Aug 2015)
   Employer – Indira Gandhi Delhi Technical University for Women
   Role – Interfacing sensors and communication modules with Arduino and Raspberry Pi
5. **Software developer** - PL/SQL (Jul 2010 to Aug 2011)
   Employer: Sopra India Pvt. Ltd.
   Client: Orange Business Services

TECHNICAL SKILLS

HARDWARE	
Microcontroller and Boards	8051, AVR, Arduino, ARM, Raspberry Pi, MBED, NodeMCU
FPGA boards	Spartan 3e, Virtex II pro FPGA kits from Xilinx
PLC	Allen Bredley, Siemens, Mitsubishi
Interfacing	Sensors (digital, analog, i2c, UART, SPI) Communication modules (GSM, GPS, Bluetooth/BLE , Zigbee, WiFi, RF) LCD, LED, Switches, Buzzer, Relay, 7-seg, DC and Stepper motor, ADC etc.
SOFTWARE	
Programming IDEs	8051 IDE, Keil (8051, ARM), Arduino, MBED
Programming Languages	Embedded C, Assembly, C/C++, Python, VB, HTML, PHP
PCB designing Tools	Eagle, Altium designer
Android App Development	MIT App inventor
FPGA Development Tools	Xilinx ISE, ModelSim
HDL	Verilog
VLSI	Cadence Virtuoso
SCADA	RS Logix 500, Intouch 7.0
Back End	SQL, PL/SQL

Products/Projects Undertaken

Product: IoT Development Board Role: Designed and divide the development and testing work among team members	SoC: ESP12e (32-bit Xtensa LX106 at 80 MHz) SRAM/Flash: 128kB, 4MB 16-GPIO, 4-channel 10-bit ADC, Various connectors On-Board: LED, Push Button, Potentiometer, Buzzer Communication: WiFi, SPI, I2C, I2S, 2xUART
Product: Embedded Development Board Role: Designed and divide the development and testing work among team members	Microcontroller: 8051 (8-bit at 11.0592 MHz) SRAM/Flash: 256B, 4KB On-board: Programmer, 32-GPIO, 4-LEDs, 2-Push Buttons, Various connectors Communication: UART
Project: Automatic LED brightness board Role: Designed and divide the development and testing work among team members	Automatic brightness control of LED signage board for Bharat Petroleum based on the ambient light using fuzzy logic and brightness stability mechanism.
Project: Classroom Interaction System (CIS) Role: Designed & Developed	Light weight IoT protocol MQTT based CIS can be used by schools for better teacher and students' interaction. 3 modes: Attendance, MCQ, Feedback
Product: Smart Light Role: Designed & Developed	Automatic control of LED and incandescent bulb intensity based on ambient light level and manual control through android app using forward phase dimming.
Product: Smart Fan Role: Designed & Developed	Automatic control of ceiling and table fan speed based on ambient temperature and manual control through android app using capacitive regulation.
Project: Environmental monitoring Role: Designed system and developed cloud and webpage for monitoring. Divide the remaining development and testing work among team members	Environmental Monitoring nodes sense various parameters like temperature, humidity, air quality, atmospheric pressure, dust density, UV radiation and send data to the cloud which can be monitored from any location using webpage or android app. It will be deployed on various locations across Delhi after testing.
Project: LPG gas leakage detection Role: Designed & Developed	When LPG gas leakage is detected, it alerts nearby people using buzzer, sends SMS to concerned person(s) and switch ON the exhaust to remove the gas from the kitchen.
Project: Water level controller Role: Designed & Developed	Based on level of water in water tank and availability of water from the supply, this system turns on and off the motor and display the status (level of water, dry run of motor etc.) on LCD.
B.Tech Projects (8051 Assembly, VB) Project: PC controlled robot Project: Remote controlled computer Project: Line Follower Project: DTMF controlled robot	**RF, UART, DC Motor, IR, DTMF, RS232** Robot controlled through PC using RF communication TV remote controls various media functions of PC Robot following a specific path Robot motion controlled by Mobile using DTMF
M.Tech Project/Thesis (FPGA, Verilog) Project: Micro Controller Design Project: Sine wave generator Project: Interrupt interfacing with 8086 Thesis: Asynchronous Processor	**Xilinx Spartan 3e, Xilinx ISE, Model Sim, Cadence** 8-bit, Harvard, CISC (41 Instructions), 2-Timers Digital Inputs: Amplitude, frequency, phase 8 external interrupts, Interrupt request and acknowledges 16-bit, Harvard, RISC (33 Instructions)
Guided in many projects in various workshops, student projects and thesis.	

TRAININGS/WORKSHOPS CONDUCTED and ORGANIZED

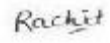
- Hands-on workshops on Internet of Things (IoT) across India
- Workshop on 8051 board development and programming across India
- PCB Hands-on workshop on Eagle, Altium Designer at IGDTUW, Delhi
- Build your own smart device using Raspberry Pi across India
- Summer Trainings, Hackathons.
- Workshop on Arduino programming at IGDTUW, Delhi
- Participated in "National conference on Product Design 2016" and EMPOWER 2018 IIT Delhi.

ACHIEVEMENTS and EXTRA CURRICULAR ACTIVITIES

- 1st Position in Informatics Practices Project Making Competition (12th Class)
- Gold Medalist in Cricket, Carrom – Singles, Doubles and Mixed Doubles – B.E. 3rd year, 4th year
- Carrom Coordinator – B.E. 4th year
- Silver Medalist in 4x400m Relay Race and High Jump (School)
- 5th National Cyber Olympiad - 2nd in School, 5th in City, 25th in State, 876th in India

DECLARATION

I hereby declare that the given above information are true to the best of my knowledge and belief and can be supported with reliable documents when needed.



(Rachit Thukral)