**SOHAM BHATIA**

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**SUMMARY**

Aspiring Embedded Engineer with hands-on experience in Face Recognition, OpenCV, ARM development boards, CAN and RTOS.

**EDUCATION**

**Illinois Institute of Technology** Chicago, IL, USA

*Master of Science in Electrical Engineering (Specialization in Computer and Microelectronics****)*** *Jan 2018 – Dec 2019*

**Oriental Institute of Science and Technology** Bhopal, MP, India

*Bachelor of Technology in Electronics and Communication Engineering**Aug 2013 – Jul 2017*

**PROFESSIONAL EXPERIENCE**

**Fuchs Lubricants** Chicago, IL, USA

***Embedded Systems Engineer***  *Jul 2020 – Nov 2020*

* Review current Transceiver functionality and sensor data stream in current EEPROM mode for manipulating RL sensor data
* Develop code that enables EEPROM configuration to DEFINE additive tank volume and Develop code that enables "fluid volume dispensed to be captured and this data to be transmitted to the FVT HUB and to deliver new additive tank volume
* Establish a hardwire connection between the transceiver and the Peristaltic Pump via UART that allows us to send data
* Develop code for the GENII Arduino that allows us to specify a target range for the RI, PH, Volume dispensed sensor data and output on transceiver and stack light with automatic bypassing or sleep mode when in range and run when out of range.

**City Health Tech Inc.** Chicago, IL, USA

***Embedded Systems Engineer*** *Feb 2020 – May 2020*

* Collaborate with CTO to design, Quality Assurance, Validation of prototypes over Arduino UNO, Nano, Feather ESP8266 and Cortex M3 ARM development platforms with Telit cellular module xE866 and xE310(3G), over MQTT IoT protocol
* Tested codes developed in Embedded C/C++ with Arduino IDE on the prototypes using ILI9430X libraries for TFT displays
* Implement schematics that incorporate sensors, ICs, Displays on Altium Circuit Maker and Eagle to design PCB layout
* Work closely on cellular modem connectivity (4G/LTE CAT1/5G) wireless technologies and IoT protocols

**Indeyes Infotech Pvt. Ltd.** Bhopal, MP, India

***Firmware and Embedded Design Engineer*** *Aug 2016 – Nov 2017*

* Developed codes in Embedded C on ATmega 16 and 32-bit microcontrollers for university based Major projects
* Built automated and self- monitoring projects such as Automated Garbage System, IoT Projects using SPI, I2C protocols
* Analyzed circuits on ISIS Proteus and CV-AVR, and designing Printed Circuit Board using Free PCB

**Airports Authority of India (AAI)** Bhopal, MP, India

***Intern Communication Engineer*** *May 2016 – Jul 2016*

* Scrutinize the transmission through ASR RADARs at ATCs and navigational equipment using NDB, LOS, Glide Scope
* Monitored safety and reliability of CCTV, Mics, Body & Bag Scanners, Metal detectors installedat airport terminals

**Indeyes Infotech Pvt. Ltd.** Bhopal, MP, India

***Intern Firmware & Circuit Design Engineer*** *May 2015 – Jul 2015*

* Developed codes in Embedded C on ATmega 16 and 32-bit microcontrollers for applications such as Line Follower robot
* Examined components like Counter, Displays, ADC, DAC, Stepper and DC motors, and Ultrasonic sensors over SPI, I2C protocols and analyzed circuits on ISIS Proteus and CV-AVR, and designing Printed Circuit Board using Free PCB

**SKILLS**

***Software:*** Altium Circuit Maker, Arduino IDE, Eagle, Eclipse, Free PCB, MATLAB, Proteus ISIS, PyCharm, Spice LT, Tinker CAD

***Hardware:*** ARM Cortex A5/ M3, Arduino boards, AT-Mega, ESP8266, Motorola 68000, NVIDIA Jetson, Raspberry-Pi, STM32Fx

***Protocols:*** ASIC, Bluetooth, BLE, CAN, GPIO, I2C, IoT, OpenCV, RS-232, SPI, SMTP, UART, USB, Wi-Fi, TCP/IP, RFID, MQTT

***Programming Languages:*** C, Embedded C, Linux Kernel, Python, C++, HTML, JSP, Git version control

***Debugging Tools*:** Digital Scope, Signal Generators, Logic Analyzer, Microsoft Office, Oscilloscope, Soldering

**PROJECTS**

**Smart Mirror with Face Detection and Google Assistance** IIT, Chicago

***Lead Design Engineer*** *Oct 2019 - Dec 2019*

* Designed a mirror that exhibits essential information managed by 3rd Party module API integration Google Assistant by Voice with Home Automation (GPIO) using NumPy and Python3 on Linux (Raspbian) over Quadcore Cortex A5 processor
* Implemented for Face Authentication using OpenCV with Machine Learning on RPi 3B+ to deliver e-mails
* Assembled cost-efficient project under $100 commercially available for more than $800 cutting down 87% cost

**Server Room Surveillance System** IIT, Chicago

***System Integration Engineer*** *Jun 2019 - Aug 2019*

* Integrated Motion detection triggered video recording through Webcam using Open CV, NumPy and Python v2.7 while using Face recognition on the recordings on Python 3 and temperature monitoring using DFduino HC-05 and LM-35 sensor
* Designed webpage by JSP and HTML with e-mail alert using STMP protocol with Online streaming resulting in efficient and cost-effective project up to 60% with enhanced security

**Hyperloop Pod (Space-X Competition)** IIT, Chicago

***Electrical Engineer*** *Sept 2018 - Dec 2018*

* Programmed Nvidia Jetson TK1 over Linux platform (Ubuntu) with Robot Operating System (ROS) to reach up to 300mph
* Fabricate an automotive pod with 6000V Battery, OPT2001sensor, VN-100, 500A2, Direct Drive, and Motors over CAN

**AutoHead Unit using Raspberry Pi** IIT, Chicago

***Diagnostics and Infotainment Engineer*** *Jun 2018 – Dec 2018*

* Design and implement an integrated AutoHead Unit using LCD touchscreen on Raspbian Jesse OS (Linux) over CAN
* Enable projection of Android apps from Android phone on the Auto head display and manipulate apps on the OpenAuto Pro
* Implement open source navigation software in embedded C and run on the system as a package using KODI
* Provide monitoring of fuel level, rpm and vehicle speed using OBD-II and Bluetooth connected to Raspberry Pi using python

**Automated Monitoring and Controlling of greenhouse through IoT** OIST, Bhopal

***Hardware Engineer*** *Feb 2017 - Apr 2017*

* Constructed human-less controlled greenhouse with ESP8266 Node MCU through sensors for moisture, temperature, humidity for crops over SPI protocol and Bluetooth connectivity using HC-05 and uploading sensor data on webpage
* Maintained real-time sensor data to decrease the human involvement by up to 90% with 50% increment of efficiency