# MAYANK SHUKLA

**8 years of experience in embedded domain.**


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## EXPERIENCE

### Senior Executive - Projects

**Varroc Lighting Systems**

June 2020 - Ongoing

Body side lamp module development.

- ADC configuration, Temperature and Voltage monitoring, Derating, Binning, Fail safe behaviour, LED driver module: configuration and diagnostics implementation.
- Python scripting to automate testing and HTML report generation of UDS server.
- Scripting for various testing and chip configuration solutions reducing production time at EOL.

### Associate - Projects

**Cognizant**

April 2018 - Feb 2020

Instrument panel cluster development as per AUTOSAR 4.3.1 standard.

- SoAd, Ethernet Wrapper and TCP-IP module owner in BswM layer.
- Experience of Vector tools: Davinci Configurator, VectorCast, CANoe, PRQA, etc.
- Debugging,static code analysis as per MISRA guidelines.
- Requirement analysis and implementation

### Firmware Developer

**Dynasense Technologies**

June 2017 - Jan 2018

A Med-Tech startup company by IITian's focused on providing economical medical solutions in market.

- Leading team of 2 people delivered 2 prototypes in span of 7 months on colorimetric technology.
- End to end development cycle of product: Firmware development,Algorithm development, PCB design and designing test cases.

### Engineer

**iSense Inc.**

Apr 2015 - Mar 2017

- Developed robotic platform with features of mimicking basic animal movement(Providing basic sense of direction and collision avoidance).
- Technical article writing.
- Automated medical report data procurement using OCR.

### Embedded engineer

**Selec Controls Pvt. Ltd.**

Aug 2013 – July 2014

Selec controls is focused on designing and manufacturing high precision and reliable meters and controllers.

- As fresher worked in production line for 2 months learning debugging and product details, which also helped me gain better understanding of product issues at manufacturing, testing, debugging and quality check.

## MOST PROUD OF

**Automated UDS server testing**
Implemented configurable python script to test UDS server implementation, reducing testing time from a day to merely 10 mins.

**Startups**
Received appreciation from clients and Director.

**ROBOCON KJSIEIT 2013**
Founded and lead the group to 47 rank at national ROBOCON competition.

## SKILLS

C | Python | MATLAB & Octave | OpenCV | Debugging | Assembly | HW/PCB design & Debugging

## TECHNOLOGIES

Ethernet/TCP-IP | VLAN | SoAd | AUTOSAR 4.3.1 | CAN | I2C | SPI | UART | Sensor integration | Ti-RTOS | Linux | Colorimetry

Tiva series TM4C1294 | Atmega 2560

CC2650 (M3)

## TOOLS USED

GHS Multi | DaVinci Configurator | Vector Cast | CANoe | PRQA | LDRA | IBM Rhapsody tool chains | TortoiseSVN | Git | Wireshark | DOOR's | CCS | Keil | MPLAB | GDB | Valgrind

## EDUCATION

### BE Electronics and Telecomm.

**KJ Somaiya Institute of enginnering and IT**

July 2009 – May 2013

# PROJECTS

## EEG based paralysed patient assistance system (year 2013)

A study project to evaluate feasibility of using EEG for paralytic patient assistance.

- Literature review of existing products in market and evaluating if ready made EEG's can be used for projects.
- EEG data cleaning, pre-processing and analysis using ICA.
- Evaluating existing algorithms and tools for EEG analysis, specially open source tools eg: NBT toolbox.

## Ethernet module management

Configuration and management of Ethernet module for Instrument panel cluster.

- Analysis and implementation of requirement.
- Configuring Ethernet module parameters using Davinci Configurator.
- Creating Detailed design documents for Ethernet module on DOOR's.
- Debugging and testing reported bugs.

## Colorimeter

A Glucometer that can detect the change in colour gradient from inhouse developed test strips and quantize the data.

- Literature review, research and technology development.
- Functional & POC development, testing, Firmware development, PCB design.
- Automation of data procurement &processing using Python scripts.
- Achieved 95% accuracy as per ISO: 15197:2013 standards.

## Omni directional bot

An omni directional bot mimicking the behavior of caribou (wild animal) as a fine art project.

- Around 10 to 20 bots sensing each other in nearby field functioning in non centralized way, very much a wild animal uses its eyes and other senses to sense nearby animals and move accordingly in a herd.
- Major challenge of this project was to implement IR sensing of each bot with minimal interference and reliable distance measurement.
- Integration of sensors like accelerometer, magnetometer and colour sensor for various other functions used by client.

## OCR pre-processing

Pre-processing the image before passing it to OCR for enhancing word recognizance.

- Structure detection, line separation and de-skewing the image of reports using OpenCV.
- Making a bi-gram and tri-gram list for increasing the prediction accuracy of tesseract OCR tool.

## Temperature controller

Increasing the precision and accuracy.

- Adding feature to compensate for steep non linear behavior at zero crossing of various thermal sensors.
- Hardware and functional testing of new series of temperature controller product.

# INTEREST

**Knowing about new ideas and technology in market.**

**Reading self help books.**

**Drawing.**

**Its major source of my knowledge and entertainment.**

# QUOTES

*"Measure twice, cut once"*

*Anonymous*

*"Don't Just Learn To Code, Learn To Create."*

*Justin Richards*

*"Be clear with your objective"*

*Dhananjay Parchure*

*"Failure is an option here. If things are not failing, you are not innovating enough"*

*Elon Musk*