

# FAROGH IFTEKHAR

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Portfolio: <https://farogh007.github.io/portfolio/>

## WORK EXPERIENCE

02/01/2017–Present

### Embedded system designer – TeamLead

Smart Joules Pvt Ltd, New Delhi (India)

Project: DeJouleTM

- Designed and Developed 3 Versions of DeJouleTM IoT Edge controllers to reduce energy waste and electricity consumption by 30-40%, which is Equivalent to the electrification of over 10,000 households every year.
- The device can execute complex time series algorithm in real-time, runs decentralized PID software which observes and control valves and actuators to optimize operations of the HVAC system. The controllers are designed to self-diagnosed the faults and send logs to the server. Designed a NAS (Network Storage) device which stores the data points from different controllers which process hundreds of data point per minute.
- Increased the reliability of data by 20-25%, improved the analog circuits and eliminated the harmonics interferences occurring due to VFD's and also solved the processor hang-up by introducing a separate watchdog controller. Reduced the command execution time from 5 seconds to 1 second by optimizing the hardware architecture.
- Managing the embedded team (6+ developers) for the last three years. Implemented a college training program Joule Lab, Trained, and mentored 50+ college students. Introduced an effective induction program for new joinee, resulted in cutting the full training time by over 30%. Formulated a process for design review, reduced error by 20-30%. Created a digital library for the documentations.
- Managing the production, Improved quality, cut lead times by 40%, cut device costs 45-50%.
- Introduced the hackathon-based placement drives in different colleges of India interviewed 1000+ students and hired the best minds.

15/12/2015–15/07/2016

### Research Intern

Indian Council of Agriculture Research, CSSRI, Lucknow (India)

- Worked under the guidance of Prof. Dr. C.L. Verma (CSSRI,) & Dr. R.K. Singh (NEFORD) to develop the automation solutions for affordable precision farming tools for farmers & researchers alike.
- Designed hardware to solve the problem of saline land reclamation by automating the optimum gypsum dosage. I have developed hardware to measure the groundwater level. Performed pilot experiment in 2 scientifically regulated farms in Patwakheda, UP-India.

## Professional Skills

### Managerial skills

Leadership, Effective Product Planning and task Management, Experience in Agile and Waterfall development, Production management, Vendor management, Inventory management, Good Communication Skills.

### Technical skills

Embedded Architecture Design, **Language** (Python, Embedded C), **CAD Tools** (Altium, Eagle), Analog, Digital, and Mix circuit design, 8/16/32 Microcontrollers and Microprocessors, Power Supply Design DC/DC, Power Budgeting, EMI/EMC, Schematics, High-Speed PCB design, **Embedded communications protocols** (ADC, DAC, I2C, I2S, SPI, USART, CAN, SATA, Ethernet, USB, RS485, RS482), **Wireless Protocols** (WIFI, BLE, LoRa WAN, GSM), MODBUS, Lab Equipment, Testing and debugging, Expert in SMD Hand Soldering, Product Documentation.

Know about Backend (Node Js, AWS Cloud services, Greengrass, Lambda), **Network Protocols** (Socket, MQTT, HTTP), **Front-End** (HTML, CSS, React JS), Open-CV, PYQT, SQLite3 Database, Git and Linux.

## Education

16/08/2012–15/06/2016

### Applied Electronics and Instrumentation Engineering

Dehradun Institute of Technology, Dehradun (India)