Shubham S. Sarwate

ELECTRONICS AND ELECTRICAL ENGINEER

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Education

BITS Pilani   *India*

BACHELOR OF ENGINEERING (HONS.) IN ELECTRICAL AND ELECTRONICS ENGINEERING   *Aug. 2013 - PRESENT*

- Fields of Interest: Communication Networks, Robotics and Embedded Systems
- CGPA : 7.5

Bachelor Thesis

Deployment of large scale Internet of Things   *Google IOT Expedition,USA*

SUPERVISOR: DR. ANIND DEY, DIRECTOR, HCII, CARNEGIE MELLON UNIVERSITY   *Jul. 2016 - PRESENT*

- The project involves building a generic IOT infrastructure for large scale deployment of IOT
- Deployed the systems at the Carengie Mellon Campus and Googleplex,California
- Developing a Machine learning based smart actuation engine which shall actuate devices according to the behavorial routines of the user.
- Worked on a crowd-sourcing system to combine data from sensors and humans for information retrieval

Technical Proficiency

Programming languages: C, Embedded C, C#, Python, php , HTML, Verilog
Simulation Softwares :   MATLAB, Cadence Virtuoso, Proteus, PSpice
Embedded Platforms :   Raspberry Pi, AVR, Arduino, DSP Board: DSK6455/6713, PSoC CY8c29, AtTiny
MOOC courses :   IOT for Developers: IBM Watson, Practical Machine Learning

Projects

Design of high speed transmission system for LiFi(Light Fidelity)   *BITS Pilani*

MENTOR: PROF. G . RAGHURAMA, EX DIRECTOR,BITS PILANI   *Jan. 2016 - PRESENT*

- Simulated and analysed the effects of Gaussian Noise,Attenuation, Multipath effects on a single light source based VLC(Visible Light Communication) system using MATLAB.
- Successfully implemented serial data transfer of files from one computer to another at a speed of 25Kbps satisfying the IEEE 802.15.7 standards for outdoor communication.
- Implemented the system on PSoC(Programmable System on Chip)

Lockheed Martin Roll On/Roll Off Challenge(funded by Lockheed Martin Corporation)   *BITS Pilani*

CORE MEMBER   *Aug. 2014 - Mar. 2016*

- Selected as a team for designing a payload for Lockheed Martin's flagship plane C-130J.
- Developed a deploy-able payload targeting humanitarian relief and rescue in case of mass relocation due to man made and natural causes.
- In charge of the Power generation and Lighting Module.

Design and Development of an AUV(Autonomous Underwater Vehicle)   *BITS Pilani*

GUIDE: PROF. K.R. ANUPAMA   *Aug. 2015 - Mar. 2016*

- Designed an AUV for pipeline monitoring and algae detection.
- Interfaced of the actuators and the data acquistion system with the on-board controller.
- Developed UI for monitoring sensor data and emergency manual override using Visual Studio C#.

Development of a voice controlled home automation system (Project Anna)
BITS Pilani
INTERNET OF THINGS   *Jul. 2013 - Sept. 2013*
- Designed a home automation system to control various household equipment via a platform independent website.
- Integrated voice commands to control the switching of the appliances and other functionality.
- Developed a GUI to enhance user interface.

Pedestrian Recognition System
BITS Pilani
MACHINE LEARNING   *Dec. 2013 - Feb. 2014*
- Designed software for pedestrian recognition from still images.
- Can be introduced into CCTV systems for detection of suspicious activities concerning security without human interference.
- Utilized machine learning algorithm of regression and curve plotting. MATLAB was used for this purpose.

Control of robots over the LAN network
BITS Pilani
INTERNET OF THINGS   *Jan 2014 - May 2014*
- Developed a robot for unmanned surveillance.
- Enabled tele-operation over the Internet to expand robot exploration radius and increase operator safety by isolation
- AVR micro-controller and Zigbee was used for controlling the bot.

Work Experience

Electronics and Robotics Club, BITS Goa
BITS Pilani
CTE-COORDINATOR   *Jul. 2012*
- In charge of handling a 20 week long lecture series to guide students in the field of Electronics and Robotics.

Celestia Club, BITS Goa
BITS Pilani
SUB-COORDINATOR   *Sep 2014 – Aug 2015*
- Revived the astronomy club to a strong team of 45 people at present by promoting love for astronomy on campus.
- In charge of the weekly astronomical observation sessions.
- Part of the editing team of the annual magazine of the club.

Teaching & Mentoring

Institute of Electrical and Electronics Engineers (IEEE)
BITS Pilani
CORE STUDENT MEMBER   *Jun. 2015 - PRESENT*
- Core member of IEEE Students chapter BITS Goa.
- Proposed various networking activities to raise awareness.
- Proposed projects under the student chapter.

Center of Technical Education: Introduction to Electronics and Robotics
BITS Pilani
MENTOR   *Fall 2015*
- Mentored 65 students basics of electronics and robotics and its application over 20 lectures spread over 20 weeks.
- Introducing the emerging fields in electronics such as IOT and connected devices.

Awards

2016	**Finalists**, Lockheed Martin C-130J Roll on Roll off challenge	*New Delhi,India*
2016	**Winners**, Quark Technical Fest : Analog Tussle	*BITS Pilani*
2016	**3rd Place**, Quark Technical Fest : Matmania	*BITS Pilani*