Chinmay Nandan Samant
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Date of Birth: 16/10/1990

TOEFL: 104 (R: 24, L: 29, S: 23, W: 28)

Objective:
Attain a master's degree to contribute towards innovative research and become well versed with the technological advances in Robotic Engineering.

Education:
M.Sc Electronic Science (University Of Pune)

Examination	Institute	University	% age	Year	Remarks
M.Sc Electronic Science	Fergusson College, Pune	Pune University	66.15	2010-2012	First Class
B.Sc Electronic Science	Fergusson College, Pune	Pune University	69.58	2007-2010	First Class

Projects:

Title **:** Non contact level measuring instrument for liquids using ultrasonic technology.

Duration **:** 6 months

Objective **:** 1] To develop a compact, non-contact liquid level measurement device using ultrasonic technology.
2] Display dynamic, real time readings with 1mm accuracy.

Description:
In this project, Time of Flight technique was used to measure the distance from water surface. This system included 3 part, Ultrasonic Burst Generator, Receiver and signal conditioning, Processing and readings display. Controller of x51 family was used for the processing of the received signal. Real time dynamic readings of the liquid level were displayed on a LCD.

Title **:** PIR sensor based motion detector

Duration **:** 6 months

Objective **:** 1]To study PIR sensor
2]To make a device for human motion detection using the sensor.
3]To integrate the device in an electronic security system.

Description :

In this project, a Pyroelectric crystal based infrared sensor was studied and applied in a device particularly to detect human presence and motion. The sensor detected certain thermal changes related to human body temperature in its range. This sensor was integrated into a house security system.

Professional Experience:

Working as Research Assistant at Centre for Sensor Studies (CSS), University of Pune

Duration: July 2012- present

Objective: Working on sensor interface systems.

Current Projects:

Project Title: Coal Presence Detection.

Objective: 1]To detect blockage in a coal conduit.
2]Estimate blockage percentage in the coal conduit.
3]Estimate mass flow in the coal conduit.

Description:

In this project, solid coal flow in a coal conduit is detected using an ultrasonic sensor. New sensor is developed to achieve penetration of ultrasonic waves through thick metal walls of the conduit. Further, estimation of blockage percentage at a particular cross section of the conduit is measured. Using this measurement, the reduced flow percentage in calculated. Complete imaging of the coal flow inside the conduit using ultrasonic technology is the next target of this project.

Project Title: Run time mass fluid (Coal + Air) flow measurement using ultrasonic technology.

Objective: 1]To measure mass flow rate of pulverized coal.
2]To integrate remote display and warning system.

Description:

In this project, pulverized flow(pf) of coal in a pipe is measured. This pipe carries the fuel to the boiler hence, changes in the mass coal pf directly affects the efficiency of the boiler. Transit Time technique of ultrasonic waves is used to measure the pf. Mass flow is also calculated in this device. Remote display and warning system is integrated to this measurement device. Real time mass flow measurement and hourly estimation of total coal flow is also achieved in the system.

Project Title: Demineralised Water Flow Meter

Objective: 1]To measure velocity of demineralised water in a high pressure pipeline
2]To calculate mass flow and cumulative of the DM water
3]To integrate remote display system.

Description:

In this project, velocity and mass flow of demineralised water is to be measured without obstructing the flow. For this purpose, high frequency (2.4MHz) ultrasonic sensors are selected. Using transit time technique, velocity and mass flow is calculated. A remote display system is integrated to show the readings.

Other Research Work :

1. Doing research in which transit time of ultrasonic is tested in different liquids of standardized densities. Using this data, an instrument for accurate density measurement using transit time technique is to be calibrated. This work is published in Raman Memorial Conference, 2013.
2. Working on an ultrasonic air transducer development project using piezo-disk elements.

Areas of Interest

- Robotics
- Control and Automation
- Sensors & Actuators Interface
- Mechatronics
- Embedded Systems
- Electronic Hardware design

Personal skills:

- Programming in Assembly language (x51 controllers).
- Programming in 'C' for embedded systems.(Done work in Keil uVision, Renesas embedded workshop)
- Hardware circuit designing. (Power drivers, signal conditioning etc.)
- Experience in Digital/Logic Circuit development.
- Layout Design using Ultiboard, ExpressPCB etc.
- Schematic Design using Orcad, ExpressPCB etc.
- Simulation using PSPICE, Orcad.

Extra Curricular Activities:

- Participated in Techfest (IIT Bombay technical festival/competition). Made a remotely operated working Hovercraft prototype.
- Was Part of Team Fergusson for Firodia Karandak competition as a Musician.
- Won 1st prize for Music.
- Won 2nd prize for "Kashiyatre"(short play)
- Won 14 prizes overall.
- Participated in various on-stage performances with my own music band (Autumn Strings) in colleges including IIT Bombay, Symbiosis Pune, Fergusson College Pune.

I hereby declare that the above information is correct, true and authentic to the best of my knowledge.

- **Chinmay Samant**