INTERNSHIP

Embryyo Innovations *(December 2013)*

Designed and developed an application in MATLAB and Qt (C++) for measuring the amplitude of the tremor in Parkinson Disease. Also devised an application in android platform for sampling the patient's tremor.

Guide: Nishant Kumar.

TECHNICAL PROJECTS

AUVSI Foundation and U.S. Office of Naval Research *(October 2012 – December 2013)*

International Robosub Competition, San Diego, California

Designed and developed a state-of-the-art unmanned ***Autonomous Underwater Vehicle*** *(AUV) that localizes itself and performs realistic missions based on feedback from visual, inertial, acoustic and depth sensors using thrusters/propellers and pneumatic actuators*

Guide: Prof. Hemendra Arya and Prof. Leena Vachhani

- Core group member of mechanical sub division; 22 membered 4 tier team; annual budget of INR 2.2 million
- Designed and modeled using CAD software aided with simulation check; performed detailed Finite Element Analysis (FEA) of the assembly and components to ensure reliability of structure
- Implemented innovative waterproofing techniques suitable for robust, fast yet reliable assembly and disassembly of the system; tested systems at 40 feet
- Secured 10th position out of 31 teams from universities all over the world

Efficient Bicycling *(September 2013-present)*

Devising a mechanism to convert the mechanical and heat energy produced while applying brakes while bicycling to some form of mechanical energy which will be used for uphill cycling.

Guide: Prof. R. K. Pant

Data Encryption and Decryption

Developed a code using linear algebra for Data Encryption and Decryption as a course project in CS 101

Guide: Prof. Sridhar Iyer

Zephyr Cading Competition *(Zephyr 2013)*

- Designed a CAD of a notional car which could fly
- The design won the most popular design award

Ball Grabbing Boat *(TechFest 2013)*

- Designed and developed a boat which maneuvered on water with the help of thruster designed and manufactured in-house
- The bot was capable of grabbing multiple balls at a time using suction mechanism

IIT Bombay Technical Activities

- Participated in inter hostel Technical General Championship
- Won first prize at Gripper making competition organized by AUV-IITB

- Developed RC car, RC plane and Line Follower in competitions organized by Student Technical Activity Body (STAB).

Self-Motivated Projects

Line Follower *(May 2013)*

- Designed and developed autonomous line following bot with Atmega32 microcontroller
- Structured PID algorithm was implemented on AVR platform

AVR Atmega32 Development Board *(July 2013)*

- Designed an AVR Atmega32 board with SPI, UART and USB interface.
- Slots provided for ADC and PWM ports

Self-Balancing Bot *(August 2013)*

- Designed and developed a two wheeled, single axis self–balancing bot using PID algorithm
- Used analog accelerometers in combination with AVR microcontroller (Atmega32)

Inverted Pendulum Stabilization *(September 2013)*

- Designed multiple models of an inverted pendulum in C++ and MATLAB
- Implemented PID algorithm to stabilize it

TECHNICAL SKILLS:

Operating System: Windows, Linux, Macintosh

Software: MATLAB , SolidWorks, Eagle, LTSpice, ANSYS, AutoCad, Photoshop, Adobe Premiere Pro, After Effects, Maya, Flash MX

Programming Language: C/C++, Visual Basic, Basic VHDL

Electrical: 8085 Microcontroller, AtmelAVR, Arduino, Raspberry Pi, ARM Cortex M4, Embedded Protocol (SPI, UART)

Mechanical: CNC, 3D Printing, Structural Designing, Metalworking /Machining, Lathing, Welding, Shaping

SCHOLASTIC ACHIEVEMENTS:

- Secured an All India Rank of 913 in IIT-JEE- '12 among half million aspirants
- Qualified Regional Maths Olympiad in 2011 conducted by HBCSE
- Awarded State Top 1% Merit Certificate by Maharashtra State (2012) for Intermediate/+2 exam
- Received an All India Rank 8 and Regional Rank 1 in Junior Maths Olympiad conducted by Kendriya Vidyalaya Sangathan conducted all over India.
- Received certificate of merit for outstanding performance at All India Secondary School Examination

EXTRA CIRRICULAR:

- Technical Mentor for students participating in XLR8, competition for making remote controlled car organized by STAB
- Coordinator at Techfest 2014
- Qualified Elementary Drawing Examination
- Pursued Guitar as Nation Sports Organization.
- Secured second position in on the spot drawing competition organized by WSSO
- Represented Hostel in Inter Hostel Chess Competition where we finished podium
- Other interests include playing Badminton, Cricket and Football