

## Experience

### **Matsya, Autonomous Underwater Vehicle(AUV)**

[autum 2014 - present]

Research & Development Project, IIT Bombay.

Guide: Prof. Leena Vachhani & Prof. Hemandra Arya

International underwater Robotics competition, San Deigo, California. Developing the algorithms to enable an AUV to autonomously localise itself and perform realistic missions based on feedback from visual, inertial, acoustic and depth sensors using propellers. It is a year long project involving co-ordinated efforts from 30 IIT Bombay students from different fields.

- Working on Image processing division of the vehicle
- Working with Robot Operating System and open-cv
- Implementing various algorithms to improve vision and make the vehicle able to perform new tasks

### **Gesture Mouse**

[Summer 2013]

*Self Motivated Project*

- Developed a program to control laptop using gestures using Image Processing
- implimented a variant of Adaptive thresholding and feature detecion algorithms

### **Refreshable braile display**

[Summer 2013]

*Finalist Intel Embeded India Challenge 2014*

- Developed a device to *reads text* from e-books and then display them in the brailie display hepls the blind in reading e-books
- Got familiarised with the use of **r-pi development board** and improved python skills
- As a followup of Institute Technical Summer Project

### **Intern at zerogames.com**

[summer 2014]

Guide Prof-Pradeep Nair, EE IIT-Bombay

- Developed a **secure login** system using sha4 hashing
- Implemented algorithms for managing users and admins profiles
- Implemented algorithms for managing game data

### **Parinath – Humanoid Robot**

[spring 2013]

- Worked in the **AI coding** division of parinath
- Learned various **supervised machine learning** algorithms related to Supervised Learining

### **Robin – Platform Game**

[spring 2013]

Guide Prof-Supraeim biswas , CS IIT-Bombay

- Designed and Coded a platform game purely in c++
- Game is completely modeled using classes , used *SDL library* for Graphics

## Fastest Finger First-Electronics Project

[spring 2013]

Guide Prof-Pradeep Nair, EE IIT-Bombay

- Designed and implemented a circuit breaker for quizzes and gameshows
- Simulated and developed a working prototype

## Programming projects

[spring 2013]

- Designed and coded 17<sup>th</sup> Asian Pacific Corrosion Control Conference website from scratch
- Designed and coded dramatics club website *dramatics club website* and Hostel 15 IITB website from Scratch

## Position of Responsibility

### Convener WnCC

[ 2013 - present]

[ *Web and Coding club IIT Bombay – one of the biggest clubs in IIT Bombay*]

- Organising various events , workshops in the institute
- Participate in competitions representing IIT Bombay

### Co-ordinator Techfest IIT Bombay

[2013-present]

- Developed a **Virtual Betting Android app** for Robowars
- Contributed to techfest website, mainly backend
- Wrote scripts for data mining
- Managed Logistics for swarm robotics event

### Tech Councilor Hostel 15 IIT Bombay

[2013-2014]

- Managed 9 tech representatives , all hostel tech related issues
- Conducted gaming competitions and workshops
- Designed coded and maintained hostel website

## Technical Skills

- **Computer Languages** : Python, JavaScript, C++, Bash, LaTeX, PHP, Html, css, ajax , visual Basic ,SQL and MySQL , Java, 3d Game designing in 3dgs-A7 , Android and assembly
- **Development Boards / Microcontrollers** : Arduinio , Rasberry-pi, Intel Galelio
- **Tools/OS** : unix, ROS, NG-Spice, solid works, photoshop

## Extra-Curricular Activities

- Made a ***Wireless Remote Controlled Tank*** for a racing competition conducted by Technical Club of IIT Bombay
- Made an completely ***autonomous line following*** vehicle
- Made an **Ball throwing robot** which could throw balls at different ranges and angles
- Participated in ***Angel-Hack*** Hackathon, ***Fire- Hack*** hardware hackathon
- Volley-Ball ,Football, Sci-fi Movies

## Relevant Courses covered

- Advanced computing for electrical engineering
- Indroduction to design – Case studies
- Computer And Network Security