ADITYA KUMAR **SINGH**

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EDUCATION

B.Tech Electrical and Electronics Engineering | National Institute of Technology, Tiruchirappalli
JULY 2017 – PRESENT
CGPA: 9.03

12th Board with PCM and 10th Board | Kendriya Vidyalaya Tatanagar (CBSE)

APRIL 2016 – MARCH 2017
Secured 92.6% in CBSE class 12th-Board.

APRIL 2014 – MARCH 2015
Secured 10 CGPA in CBSE class 10th-Board.

AREAS OF INTEREST

- Embedded C
- Computer Vision
- Web Development

SKILLS

- **Programming Languages:** C, C++, Embedded C, Arduino, Python, HTML 5, CSS 3, JavaScript, PHP, jQuery, Bootstrap, MySQL.
- **Software Skills:** OpenCV, ROS, Adobe Premiere Pro, Adobe After Effects, Git.
- **Hardware:** ATmega Series, Raspberry Pi, BeagleBone Black.
- **Languages Know:** English, Hindi.

PROJECTS

➢ ARBOC *(Ongoing)* *Aug 2018 - Present*

ROS Implementation,

In this project, we build an underwater hyper-redundant snake robot with an aim to understand the dynamics of underwater robots in general and the effect of lift, drag and hydrodynamic coefficients on them and to simulate, validate and develop a snake-like robot which is robust enough to carry out underwater exploratory tasks.

- Git Hub Link: *https://github.com/adityasingh3007/Arboc*

➢ AntBOT eYRC -2018, IIT Bombay *Nov 2018 – Feb 2019*

Image Processing, 3D Designing, PID Control, Path Planning Algorithms

To understand the cooperation and coordination in the work performed by the ants, we aim to make BOT which will depict the work of a single ant. The BOT will collect leaves, honey, wood from the Shrubs Area and store it

for winter and/or remove the trash from its Ant Hills. The BOT will follow a pre-defined black path (same as path left by ants while traveling to collect supplies so that their fellow ants can follow it).

- Git Hub Link: *https://github.com/adityasingh3007/AntBOT*

➢ *Portable Braille (Ongoing)* *Dec 2018 - Present*

Image Processing, Braille System (Grade 1 and Grade 2)

The project's aim is to make a Portable Braille system as an assistive reading device to solve the problem of unavailability of many of the books and texts in Braille script. The camera fitted on the wearable spec will capture the image in front of it. Using 'pytesseract' OCR library we will extract the text present on that image. Then that text will be converted to braille and will be actuated on the braille terminal.

- Git Hub Link: *https://github.com/adityasingh3007/Portable_Braille*

➢ *Gesture Controlled Wireless Game Controller* *Sep 2018 - Oct 2018*

IR Communication, NEC Protocol

The project's aim is to make a controller to play various games on Desktop/Laptop such as Asphalt, using IR communication. The controller can sense the gesture of hand and will accordingly emit signals. The receiver attached to Laptop/Desktop will detect those signals and will control the game as per the signal received.

- Git Hub Link: *https://github.com/adityasingh3007/Gesture-Controlled-Wireless-Game-Controller*

➢ Autonomous Maze Solver *Sep 2017- Oct 2017*

Left Hand Algorithm, PID Control

A differential drive mobile robot which autonomously solves a maze using Left Hand algorithm and PID Control. The bot can also be controlled via Bluetooth manually.

MINI-PROJECTS:

➢ Lumigma *March 2018*

Morse Code, Embedded C

A simple system for communication between two laptops using Morse Code. But to keep it simple Morse code will be transmitted by flashing Laser Light from the transmitter side and will be detected by LDR placed on the receiver side. Morse code is used to keep the messages secure.

➢ FatLady *Mar 2018-Apr 2018*

Embedded C, Home Automation

Just like how Fat Lady guards the entry to the House Rooms of Hogwarts School of Wizardry (Harry Potter), in a similar way this project aims to develop a full proof security system so that it will only give access to authorized personnel inside a room. The person has to a type in a passcode in whenever he wants to enter/exit the room because only then the gate will be opened. Also, the room has a modified form a visitor counter in it which can count the total number of persons inside the room at a particular time.

ACHIEVEMENTS AND CO-CURRICULAR ACTIVITIES

- Secured 2nd rank in "CRE-8" competition held exclusively for the first years by SPIDER R&D Club of NIT Trichy.
- Organized and conducted a five-day workshop on "Wireless Game Controller" using IR Communication for 270 students conducted for 1st years student of NIT Trichy by Spider.

EXTRA CURRICULAR ACTIVITIES

- Member at Spider, R&D Club of NIT Trichy