Deepak Goyal

3rd - Year B. Tech Student
Electronics and Instrumentation Engineering
Indian Institute of Technology (ISM) Dhanbad

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Academic Details

Year	Degree	Institute	Percentage/CGPA
2016-Present	B. Tech in Electronics and Instrumentation Engineering	Indian Institute of Technology (Indian School of Mines) Dhanbad	CGPA = 8.13/10 (till 5th semester)
2015	Class 10th- AISSCE (CBSE)	Kendriya Vidyalaya, NewDelhi	91.60%
2013	Class 12th-AISSCE(CBSE)	Kendriya Vidyalaya, New Delhi	95.0%

Pursuing a **Minor** in **Computer Science and Engineering**

Scholastic Achievements

- Secured All India Rank in **top 1 percentile** in the **IIT- Joint Entrance Examination 2016.**
- Qualified for Regional Mathematical Quiz (KVS) in Delhi region (2012).

Major Projects

- **HandDrawn Electrical Circuit Recognition and Simulation** Aug '18 – present
  - Designing and Developing Computer Vision models for recognising hand drawn electrical circuit using Python computation libraries like NumPy, OpenCv etc.
  - The goal is to simulate the recognised circuit using Open Source Simulators like-SPICE, Oregano, Qucs etc.
- **8 Ball Puzzle Game** May '18 – June '18
  - Implemented the famous 8 Ball Puzzle Game using **A* Search Algorithm** and **Red Black Tree** in Java as part of the Algorithm Course.
- **Line Sensor and Line Follower** Jan '18 – April '18
  - A generic line sensor was made using array of **LDRs** and Comparators which can detect line upto width 7.5 cms on any contrast background color.
  - Using above sensor a line follower bot was made which can follow line and correct itself using **PID Controller** on a contrast background. The Bot was Programmed so as to find and follow the **shortest path** between the two intersections when placed in a grid of lines.

- **Robocon'18 | ABU Asia pacific Robot Contest** Oct '17 – Mar '18
  Guide: Dr. Kaushik Mazumdar, IIT(ISM) Dhanbad
  - Designed and implemented Programing models for traversing of robots, throwing shuttle cocks as per the problem statement of Robocon' 18 held in Pune, India.
  - Designed and developed libraries for various sensors and actuators like motors, pneumatics, line sensor etc. Implemented protocols for Communication between operator and bot and in between Coordination of bot.
- **Selfbot | Self driving bot** May '17 – Aug'17
  - A bot was made which can traverse between two lines on its own using Raspberry Pi, Pi Camera and Open Source Python Libaray for self driving bots **(Donkey library)** which is a bundle of other python computation libraries like Numpy, Open CV, Tensorflow.
  - The Model used a **Convolutional Neural Network** to detect the position of bot w.r.t the lines.

Position of Responsibility

- **Member | Robotics Club, IIT(ISM) Dhanbad** Sept '17 – Present
  - Conducted various tutorial sessions on Image Processing, Wireless Communication Modules, Development boards, sensors etc.
- **Robotics Event Coordinator | Concetto'18 – Techfest, IIT(ISM) Dhanbad** Aug '18 – Oct '18
  - Responsible for conducting autonomous robotic contest- Flash in the TechFest' 18.
- **Robotics Event Organiser | Concetto'17 – Techfest, IIT(ISM) Dhanbad** Oct '17 – Jan '18
  - Organised programming intensive robotics contest (SWAT) in concetto' 18.

Technical Skills

- **Programming Languages:** Java, Python, C, C++
- **Frameworks/Softwares:** Tensorflow, MATLAB, OpenCV, NumPy
- **Development Boards:** Arduino, Raspberry Pi
- **Platforms:** Linux and Windows.

Extra-Curricular Activities

- **Programming Contests:** Actively participates in Online Programming Contests and solves algorithmic challenges on various sports programming websites. Specialist on Codeforces, level 2 on Project Euler, Max. rating of 4 star on Codechef etc.
- **Teacher | Kartavya, IIT(ISM) Dhanbad** Jan '17 – Jan '18
  - Volunteered as teacher and taught Mathematics to grade 8th student in the student run NGO of our institute.
- Organized "***E- Cycle***"- A campus-wide **E-Waste Management** Drive. Dec '16 – Jan '17