Sai Vedant

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EDUCATIONAL QUALIFICATIONS

Year	Degree/Certificate	Institute	CPI
2021 - Present	B.Tech (Electrical Engineering)	Indian Institute of Technology, Kanpur	8.8/10
2021	Class XII (CBSE)	Yogiraj Public School, Kota	92%
2019	Class X (ICSE)	St. Paul's School, Rourkela	98%

ACADEMIC ACHIEVEMENTS

- Secured **All India Rank 1010** in the **Joint Entrance Examination (JEE) - Advanced** among 200,000+ candidates *(2021)*
- Secured **All India Rank 1568** in the **Joint Entrance Examination (JEE) - Main** among 1,000,000+ candidates *(2021)*
- Received the **KVPY Fellowship** with an **All-India Rank 587** (SA - Class 11) and **All India Rank 1078** (SX - Class 12) *(2020, 2021)*
- Qualified Stage-2 of NTSE and received the **NTSE Scholarship** and qualified **NSEJS.** **(***2019,2018)*

KEY PROJECTS

- **Voltage Regulator and On Board-Charging PCB Designing-** *AUV, IITK* *(Sept'22-Ongoing)*

  - **Learnt about Battery Management system and real-life Li-Po batteries. On MATLAB simulated a Lithium Ion Battery and implemented over current protection and undervoltage protection.**
  - **Using KiCAD implemented the design of a Buck Convertor PCB using the TPS51397ARJER IC which limits input voltage of up to 24 Volts from the battery to 5 Volts being supplied to the main microcontroller circuit.**
  - **Using Altium to implement smart on board charging of batteries of the AUV.**
  - **Currently working on extracting Hydrophone Signals used for navigation of the bot.**

- **LMiT-22**– *SnT Summer Project-Robotics, IITK* *(June'22 - July'22)*

  - **Worked on making a Self-balancing Last Mile Delivery Robot. The robot moved such that the box with the delivery contents is always flat. This is achieved by using a stepper motor and PID control system. The self-balancing uses the principle of an inverted pendulum. Due to time constraints the self-balancing part was only practically implemented and the box movement was not materialized from theory.**

  - **MECHANICAL- Learnt Fusion 360. Designed the robot and optimized the design using Generative Designing.**
  - **ELECTRICAL- Implemented NEMA-17 Stepper motor control and calibration using A4988 stepper motor driver. Used MPU6050 gyroscope to get data about the angular inclination of the robot with the three axes. Arduino Uno microcontroller was used to control the robot,**
  - **SOFTWARE- Learnt about control systems. Understood The code for self-balancing using PID controllers written in Arduino IDE.**

TECHNICAL SKILLS

- **Programming Languages:** C, C++, Python, Verilog HDL
- **Utilities/Libraries and Softwares:** Altium. KiCAD, Electric, Xilinx ISE, Arduino IDE, MATLAB, Fusion 360,ROS

POSITIONS OF RESPONSIBILITY

- **Team Member AUV, IITK- Electrical Subdivision** (*Sep'22 - Present*)

  Undertook Electrical Circuit Designing Projects as well as MATLAB simulation of battery management for AUV-IITK which is developing Anahita, an Autonomous Underwater Vehicle to move and perform tasks without remote controlling underwater.

  Learnt ROS basics.

- **Secretary, Book Club, IITK** (*Sep'22 - Present*)

  As a part of a 20 membered team cataloguing and management duties of 6000 books at the book club as well as organization of Literary Events.

- **Secretary, English Literature Society, IITK** (Sep*'22-Present*)

  Writing for the bimonthly literature magazine- Dandelion as well as performing life poetry in Open Mics.