

VIVEK MUDGAL

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EDUCATION

Indian Institute of Technology Kharagpur

B.Tech in Electrical Engineering
Minor in Computer Science and Engineering

July 2015 - July 2019(Expected)

CGPA: 8.22 /10

Gyan Ganga International School

All India Senior School Examination
All India Secondary School Examination

March 2014

90.6%

CGPA: 10/10

RESEARCH

IIT Kharagpur

Discrete-time Control Systems

May 2017 - July 2017

Prof. in charge: Dr. Arun Ghosh

- Modelled the dynamics of a metallic ball balanced in a magnetic field and linearised the model
- Designed and implemented a discrete time controller for the magnetic levitation model on Simulink
- Observed the effect of the change in sampling time and compared the controller with continuous time controllers

Aerial Robotics Kharagpur

Team Member, Control and Embedded Systems

January 2015 - April 2015

Prof. in charge: Dr Somesh Kumar

- Designed and fabricated a dual flip flop based emergency kill switch of a quadrotor for safety purpose
 - Made the Simulink model of a quadrotor along with PID control to study its dynamics and control
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POSITION OF RESPONSIBILITY

Technology Robotix Society, IIT Kharagpur

Head

February 2017-Present

- I am responsible for designing an autonomous event to be held at Kshitij 2018, Asia's largest techno- management fest. I help conduct technical workshops across India to spread the culture of robotics. Also I organize weekly lectures on manual and autonomous robotics for over 300 students round the year along with workshops and hackathons. I lead a three-tier team to successful planning and execution of all these events.

IEEE Robotics Winter Workshop

Autonomous Robotics Mentor

December 2016

- I conducted a week-long workshop for 43 first and second year undergraduates at IIT Kharagpur. As a final project of the workshop I helped the students build a gesture controlled robot capable of removing small obstacles in its path. I taught about microcontrollers, and concepts like ADC, Timers, Interrupts, Communication Protocols and basic control theory.

PROJECTS

Smart Steer Wheel Chair Attachment

April 2016

- Worked in a 20 membered team for Inter hall Hardware Modelling to make an autonomous Wheelchair
- Contributed in interfacing sensors including SONARs, GPS; writing obstacle avoidance algorithms on ROS and designing Eagle CAD circuits

ACHIEVEMENTS

International Aerial Robotics Competition

August 2017

- Represented IIT Kharagpur in the “2017 Dream Angel Cup” held in Beijing. Won an award for the Most Innovative Design in Asia/Pacific Venue

Inter Hall Hardware Modelling

February 2016

- Part of a Gold winning team which designed a attachment to increase the utility of an ordinary wheelchair

JEE Advanced

June 2015

- Secured an All India Rank of 975 in JEE Advanced, 2015 among those who qualified with a percentile of 99.5

COURSEWORK

IIT Kharagpur

Completed

Electrical Machines
Analog Electronics
Signals & Networks
Introduction to Electronics
Transform Calculus
Programming & Data Structures

Ongoing

Control Systems Engineering
Linear Algebra
Digital Electronics
Power Electronics

Additional Courses

Completed

Control of Mobile Robots(Coursera)

Ongoing

Machine Learning (Coursera)

SKILLS

Computer Languages

C/C++ (Proficient), Python, MATLAB

Software & Tools

ROS, Gazebo, Arduino, AVR, Git, Linux, L^AT_EX, Eagle CAD, LabView, PSpice, Simulink

September 14, 2017