Vivek Mudgal

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Education

Indian Institute of Technology Kharagpur *July 2015 - July 2019(Expected)*
B.Tech in Electrical Engineering CGPA: 8.22 /10
Minor in Computer Science and Engineering

Gyan Ganga International School *March 2014*
All India Senior School Certificate Examination 90.6%
All India Secondary School Examination CGPA: 10/10

Research

IIT Kharagpur May 2017 - July 2017
Discrete-time Control Systems *Prof. in charge:Dr. Arun Ghosh*

- Designed and implemented a discrete time controller for a non linear magnetic leviation model on Simulink
- Worked on developing a 2-DOF controller and implementing it on real world system.

Aerial Robotics Kharagpur January 2016 - Present
Team Member, Control and Embedded Systems *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
- Developed algorithms for vision based autonomous landing of drone in vicinity of mobile robotic platform.

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 an attachment to increase the utility of an ordinary wheelchair

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

Position of Responsibility

Technology Robotix Society, IIT Kharagpur February 2017-Present
Head

- I am responsible for designing an autonomous event to be held at Kshitij 2018, Asias 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 December 2016
Autonomous Robotics Mentor

- 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.

Coursework

IIT Kharagpur

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

Ongoing
Control Systems Engineering
Linear Algebra
Digital Electronics
Power Electronics
Data Analytics

Additional Courses

Completed
Control of Mobile Robots(Coursera)
Aerial Robotics(Coursera)

Ongoing
Machine Learning (Coursera)

Skills

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

Software & Tools
ROS, OpenCV, Arduino, AVR, Gazebo, Git, Linux, LaTeX, Eagle CAD, LabView, PSpice, Simulink

November 9, 2017