Ekansh GUPTA

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EDUCATION

BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI   *2019 - 2023(Expected)*

B.E IN MECHANICAL ENGINEERING. CGPA: 8.03/10.00

BRIGHTLANDS SCHOOL, DEHRADUN   *2019*

12TH STANDARD ISC. PERCENTAGE: 95.25

BRIGHTLANDS SCHOOL, DEHRADUN   *2017*

10TH STANDARD ICSE. PERCENTAGE: 97.2

PROJECTS

AUTONOMOUS QUADRUPED   *Mar 2021 - Present*
Group project under Team Robocon to create an indigenous quadruped. Received funding of rupees **12 lakhs** for the project from BITSAA.

SELF BALANCING BOT   *Sept 2021 - Present*
Part of autonomous Mobile Robotics course trying to train an RL agent to self balance itself and maneuver to goal location

PATH PLANNING ALGORITHMS   *Jun 2021 - Jul 2021*
Implemented basic path planning algorithms in python such as A*, Dijkstra and more along with position estimate filters like GH Filter, EKF etc

EXPERIENCE

STUDY ORIENTED PROJECT   *Aug 2021 - Present*
Working under Dr Manoj Soni to create an adaptive solar panel cleaning bot. Received a funding of **Rs 40,500** to create the robot. Currently planning to get the **design patented**

SUMMER INTERN, SIRIUS MOTOR SPORTS   *May 2021 - Jul 2021*
Studied and simulated the electric power train for a Small Commercial Vehicle and optimised that according to our needs in Simulink.

STUDY ORIENTED PROJECT   *Jan 2021 - May 2021*
Worked under Dr Jitendra Singh Rathore on the development of artificial skin. We had to test the various mathematical models for skin materials in Ansys to test for the accuracy of the model and suggest the best one among them.

COMPETITIONS

EYANTRA IIT BOMBAY   *Oct 2021*

Working on creating a self balancing bot on CoppeliaSim

QUARKS BITS GOA   *July 2021*

Stood second in Arduino based inter-college competition.

FLIPKART GRID 3.0   *Sept 2021*

Created a swarm architecture to deliver parcels. Cleared round 1 prepping for round 2 now.

FLIPKART GRID 2.0   *Sept 2020*

Suggested a hexacopter for delivering parcels in indoor environments and simulated the same in ROS. Reached the semi-final round and got a cash prize of **Rs 1500.**

EYANTRA IIT BOMBAY   *Sept 2020*

Worked on ROS drone package to deliver the parcel to a fixed goal location.

Position of Responsibility

Quadruped Team Head - Team Robocon
Mar 2021 - Present

Working on an autonomous quadruped like the Boston Dynamics' spot mini. Implemented the bezier gait for the quadruped and working on Reinforcement learning for a stable gait in uneven terrain.

Technical Head - electronics and robotics - IEEE Bits Pilani
Aug 2021 - Present

Technical head to look into all the work related to electronics and robotics and events concerning these in the fests.

Technical Coordinator - IEEE BITS Pilani
Mar 2021 - Mar 2021

Conducted the RL version of Robosoccer and helped teams get started with RL and train their models using stable-baselines

Skills

Programming	***Experienced*** Python | C | Java | MATLAB ***Familiar:*** C++ | LaTeX | Simulink
Libraries	Jupyter | Matplotlib | Numpy | Pandas | Scikit-learn | Gym | PyTorch | Tensorflow
Softwares	ROS | ROS2 | Webots | GIT | Fusion360 | ANSYS
Languages	***Native:*** Hindi ***Fluent:*** English

Relevent Coursework

- **University**: AutonomousMobileRobotics(Ongoing), Digital Image Processing(Ongoing), DeepLearning(Ongoing), ProbabilityandStatistics, LinearAlgebra, Differential Equations, Multivariate Calculus
- **Other**: Robotics Automation using ROS (summertermproject), Control of Mobile Robotics GeorgiaTech(Coursera, Audit), Robotics Specialization UPenn(Coursera, Audit)

Volunteering Experience

- PMP Mentor :- Mentored a group of 10 students in their academic and social problems faced. Moreover, was a part of AUGSD Team to guide approx 1200 juniors with their time table formation.
- Team Robocon :- Organised a workshop to teach students to create a bluetooth controlled bot using Node MCU. Later conducted an online workshop for approx 500 juniors to promote Arduino and robotics culture on campus.

Extra

- Guitar
- Cycling
- Badminton
- Stock Trading