EKANSH GUPTA

Course : **B.E. (Hons.)**, Mechanical Engineering, 2022
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CGPA : 7.88

ACADEMIC DETAILS

COURSE	SPECIALIZATION	INSTITUTE/COLLEGE	BOARD/UNIVERSITY	SCORE	YEAR
CLASS XII	SCIENCE	Brightlands School	ICSE	95.25 %	2019
CLASS X		Brightlands School	ICSE	97.2 %	2017

Subjects / Electives	Deep Learning, Mechanisms and Machines, Autnomous Mobile Robotics
Technical Proficiency	ANSYS, Fusion 360, AutoCAD, MATLAB, Simulink, Python, ROS, SLAM, Path Planning, Deep Learning, Reinforcement Learning, Tinkercad, Java, Git, LTSpice, Web Development

SUMMER INTERNSHIP / WORK EXPERIENCE

Summer Intern, Sirius Motorsports — **May 2021 - Jul 2021**
Studied and simulated the **electric powertrain** for a Small Commercial Vehicle and optimised that according to our needs in **Simulink**.

Summer intern, Campus Binge — **Jun 2021 - Jul 2021**
Created a **Discord bot** in python for a startup called Campus Binge that can manage the roles of the members and saves their scores using **MongoDB** according to the task done.

Undergraduate Thesis, IIIT Hyderabad — **Jun 2022 - Dec 2022**
Worked on making LOAM differentiable. Contributed to the development, training, and testing of the Deep Learning model to assign weights to each lidar point for ICP calculation.

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 - eletronics and robotics - IEEE — **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

PROJECTS

Autonomous Quadruped - Robotics — **Jan 2020 - Present**
Group project under Team Robocon to create an **indigenous quadruped** more efficient than the Boston Dynamics Spot. Received funding of **rupees 12 lakhs** for the project from BITSAA.

Study oriented Project - Skin Tribology — **Jan 2021 - May 2021**
Worked under Dr Jitendra Singh Rathore and Mr Ashish Shrivastava 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.

Study Oriented Project - Renewable energy — **Aug 2021 - Present**
Working on the design of a low-cost **solar tracking system** under Dr Manoj Soni. Currently working on the development of **PV panel cleaning robots** to minimize soiling loss

Unmanned Aerial Vehicle - Robotics — **Oct 2022 - Nov 2022**
Part of MeitY funded project on "Design and Fabrication of Passenger Drone" in collaboration between IIIT Hyderabad and IIT Hyderabad. Involved in the hardware and software prototyping, integration, testing and development of algorithms for motion planning (global & local) and dynamic obstacle avoidance for pixhawk based quadcopters.

Autonomous wheelchair - Robotics — **Sep 2022 - Oct 2022**
Product based project funded by IHub-Data for prototyping a VLN based autonomous wheelchair which can be deployed at hospitals or airports. Worked on the hardware implementation along with mapping and localization side of the project by using AMCL and RTABmap.

COMPETITIONS

Flipkart Grid 3.0 — **Sep, 2021**
Participating in the ongoing Flipkart's Robotics challenge for this year and worked on **image recognition** and **ROS.**

Flipkart Grid 2.0 — **Sep, 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.**