MOHAMMAD ANAS IMAM KHAN

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LinkedIn Profile

EDUCATION

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI, CGPA: 6.80/10, First Class
Bachelor of Science in **Mechanical Engineering** May'18

ACADEMIC PROJECTS

Adaptive Cruise Control and Autonomous Lane Keeping on an RC Car Nov'19

- Programmed the RC car in Arduino to run down the ramp at CU-ICAR by implementing a controller that worked using ultrasonic sensors.
- Implemented PID Control to maintain a distance from the walls and make the vehicle position itself 30cms away from any obstacle both at the start and end of run down.

LIDAR Sensor Placement Optimization in TASS Pre-Scan Oct'19 – Dec'19

- Modeled the effects of weather in the environment and studied how they affect LIDAR point cloud data.
- Studied placement of four LIDAR configurations for six different specifications of LIDAR to decide the best LIDAR suited for each placement.
- Static and Dynamic Environments were modeled in Pre-Scan and the Point Cloud Data was studied in MATLAB.

INDEPENDENT PROJECTS Projects Portfolio

Development of a Vehicle Navigation Action Client-Action Service Using ROS Dec'19-Jan'20

- Deployed a Vehicle Navigation system on a Dbw/MKZ robot that utilized GPS coordinates to calculate the distance to a waypoint and make the vehicle move toward the waypoint by listening to the action server.

Behavioral Cloning using Deep Learning Nov'19-Dec'19

- Collected brake, throttle, steering, speed data and a number of images to clone the driving behavior used to manually run the vehicle on Carla Simulator.
- Developed a Convolution Neural Network in Python which was used to train on the collected data and run the vehicle on a different track in the simulator.

Hardpoint tuning in Adams to achieve target pitch gradient using suspension anti-characteristics Apr'19-June'19

- Modeled Double Wishbone and Multi-Link Assembly for Front and Rear Suspension in Adams.
- Tuned Hard-points to achieve Braking Pitch Gradient Target of 1.6° and Acceleration Pitch Gradient Target of 2.25°.
- Studied the effect of hardpoint tuning by plotting Overlay Curves.

CFD Simulation of a Formula SAE Car Running Over Two Different Tracks Feb'19-Jul'19

- Set up Virtual Wind Tunnel Around FSAE Car, applied boundary conditions and meshing on the geometry in Converge Studio.
- Evaluated Drag and Down Forces on Individual Components of the car in Para-View and suggested necessary changes in design.

Spring and Anti-Roll Bar Selection for a 4WD Sedan October'18-November'18

- Prepared a detailed excel sheet that gives appropriate calculations for spring rates, ride frequencies, flat ride plot, roll bar diameters, acceleration and braking pitch gradient based on various vehicle parameters while complying with the vehicle level targets.

Technical Skills

- Language: MATLAB/SIMULINK, Python, Keras, C++, OpenCV Robot Operating System (ROS)
- CAE Tools: CONVERGE CFD, MSC ADAMS CAR, TASS Pre-Scan