



ANNUAL REPORT

of

Team DTU Supermileage

Submitted to



Delhi Technological University

(Formerly Delhi College of Engineering)



PRESENTS-

Through our campaigns, we have endeavored to convey a range of skills and abilities to many stakeholders in our society, allowing them to develop their current skill sets and attain their goals with this fresh information. Our work over the past year has been focused on shedding light on the spectrum of electric cars, conserving resources, and contributing to the creation of a sustainable utopic world for future generations. The initiatives include **Projectile, Invictus, Shelly, Mythbusters, Covid -19 (face it or break it), and Conserve Nature**, with the primary goal of spreading awareness and imparting skills about EVs and their myths, facts, and range. Some initiatives aimed at raising awareness about the need to maintain and conserve nature and the human spirit.

Dedication was imperative for the growth of our team, over the last few months, the team's mettle has been put to the test, and we have proven our unity time and time again. Throughout the project, the crew surmounted all obstacles by working together and bonding. Our recent growth in social media presence has also assisted us in acquiring sponsors, who appreciate the team's tenacity and the open lines of contact we give. It was a movement, an endeavor by our team to improve society. We were inspired to make a difference in society and create a better future for our children after seeing the sparkle in their eyes. The competition has long been regarded as a litmus test for the world's best minds.



INTRODUCTION

DTU Supermileage, founded in 2005, is a collegiate research team of young car enthusiasts from Delhi Technological University with the goal of designing and building high-mileage and super efficient gasoline and electric vehicles while keeping the impending fuel crisis in mind.

To accomplish this, we design, manufacture and advertise innovative products and systems that reduce our environmental impact, increase productivity, improve energy efficiency and ensure the safety of our communities.

Our Vision

It's not about how fast we go,

It's about how far we go.

Leading the world towards a greener future through innovation in the fields of mobility, fuel and energy.

Innovation is not just about technology, but it's also about how it is used and who benefits. It's not about how fast we go, it's about how far we go!



Meet our Team

★ **Captain**

Parth Singh

★ **Vice Captain**

Dhruv Bihani

★ **Manager DTU Supermileage**

Aryaman Rao

★ **Treasurer**

Harshit Gupta

★ **Head, Electronics and Embedded Systems**

Ishaan Sachar

★ **Head, Engine and Transmission**

Sanskar Verma

★ **Head, Aerodynamics (SMV)**

Paras Singh

★ **Head, Aerodynamics (E-SMV)**

Anubhav Dhyani

★ **Head, Steering And Brakes**

Madhav Sachdeva

★ **Head, Corporate**

Aryan Mittal

Complete Details of the Event performed during the year 2022

FUTURE RIDER

A futuristic competition held by the Shell Eco Marathon was focused towards ideating on a vehicle built for the future by revamping a retro vehicle! We revamped The Knight Industries Two Thousand (KIIT) which was a concept vehicle in the 1980s into a futuristic legendary car with advanced technologies and features. We came up with really good ideas to increase the mileage keeping in mind the safety of the passenger and people around. Solely upon our sheer hard work and thinking capability, we bagged **1st position in the Asia-Pacific Region** for the Future Rider award



PITCH THE FUTURE

A competition that challenged students to apply their technical skills to real world problems and come up with solutions for a series of energy-related mini-challenges. The best teams then pitched their ideas in a virtual environment to a panel of industry experts. We came up with an idea of making an autonomous delivery system using drones for a faster and safer delivery of goods! For this idea and simulation, we became the **Global Winner!**



SHELL ECO-MARATHON

INDONESIA (October 2022)

It's a global event where teams from across the globe participate with their urban concept and prototype vehicles in gasoline, electric and hydrogen segments. From India amongst 30 teams **only 3 teams were selected including ours**. It indeed helped us gain a wonderful exposure traveling to Indonesia and interactions with the foreign teams motivated us to work over different tangents and develop the car with a completely new design. We participated with our Electric Urban Concept vehicle and recorded a whopping **mileage of 70 km/kWh**.



Communications Award

Team DTU Supermileage simply hit all the right buttons on communications and campaign, with a bigger vision, clear target audiences, multiple channels for the content, and various campaigns to tackle social issues from immediate pandemic challenges to issues impacting women. Specifically, their content is innovative and engaging, and creativity is demonstrated through strong visual assets developed for the campaigns. The team was able to distill technical information into fun, engaging and relevant content that is amplified through all channels. The team's social impact initiatives were impressive, touching many different underserved communities, while continuously looking to improve themselves as a team.

We were the **Global winners** of Communication award

DATA and TELEMETRY Award

For maximizing the on-track performance of the battery-electric Urban Concept vehicle, Team DTU Supermileage devised an in-vehicle real-time telemetry system. Studying the various real-time data under distinct driving techniques provided by different sensors, offers practical information to the driver and the team. We secured **2nd position in the Asia-Pacific region!**

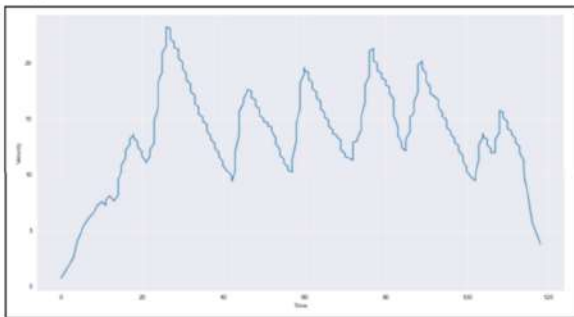


Fig 1. Velocity vs Time Graph of Aggressive/Mild Acc. Method

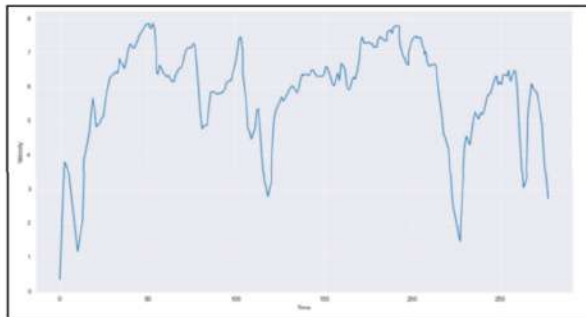


Fig 2. Velocity vs Time Graph with the Burn & Coast Method

INVICTUS (2022)

Invictus is Delhi Technology University's yearly technological festival. We worked with the Invictus team to display our Urban Concept vehicle. This event was a great opportunity to show our progress and get feedback from the community. We highlighted the technology used that contributes to sustainable development and made our audience aware about greener energies. We gave knowledge about carbon fiber, its benefits and how it can be used to produce super mileage vehicles.



TALEEM

Volunteering your time to support a cause you are passionate about is something you will never regret. It will enrich your life, familiarize you with your community, and connect you to people and ideas that will positively impact your perspective for the rest of your life. Helping your community is an opportunity for you to grow as a person, to better understand how you fit into the world around you.

Donating your time to support those around you is extremely beneficial, both for you and your community. It is statistically proven that people who volunteer regularly are healthier both physically and mentally.

DTU SMV believes that education is the key to better economic opportunities, healthier families, individual freedom and empowerment. We recognize that education is not only a fundamental right – it is also a powerful force that brings social change, innovation and transformation. Children are the future, and their education is one of the most critical factors to help a community rise above poverty.



PROJECTILE- Event

In collaboration with SAE, Team DTU Supermileage organized a **catapult making competition** where multiple teams from the college participated

The participating teams came up with catapults that were beyond the expectations of the judges which resulted in a tough competition among the teams.

It was a pleasant atmosphere of teamwork and cheerful spirit all around the contest venue. Irrespective of the win, everyone got to learn some new skills and techniques

The teams were judged by experts on the basis of skills, technique, range of the projectile, and various such parameters

The winning teams were awarded with cash prizes.





BEZUBAAN TRUST- Social Campaign

How often do we see animals near our roadways, shoulders, and medians? Are there areas in India where accidents involving animals are more likely? Join us to find out the answers to these questions, and learn how over 1,000 fellow Indians feel when they've had a run-in with an animal on a road.

In gratitude for the lives we have been given, let us take care of beings who are unable to take care of themselves, help those who can't help themselves.

Animals have access to the roads and will be wandering around and on them, with the threat of accidents always looming over their heads. They are unpredictable, easily startled, and frequently panic when they see or hear a vehicle. They may wander onto and cross roads without any regard for traffic. Join us, help the unseen, voiceless, universal beings.

In collaboration with Bezubaan Trust, DTU Supermileage pledged to raise awareness and help these animals.