The Problem:

- Current rovers for space exploration are bulky.
- The weight of the Curiosity rover was ~899kg.
- Price of taking 1 Kg of payload into space is around 3.7 lakh.
- Such costs are not feasible to explore smaller planets and asteroids.
- These missions also have a **high failure rate of ~50%!** Getting the technologies right immediately is paramount.

Our Solution:

We propose ***Trequer***, an all-terrain cost effective rover for space exploration - designed for agility. Designed as a preliminary mission and as a platform for researchers to use plug and play technology. Also offers a interactive real time dashboard for Data Analysis.

Prototype #1

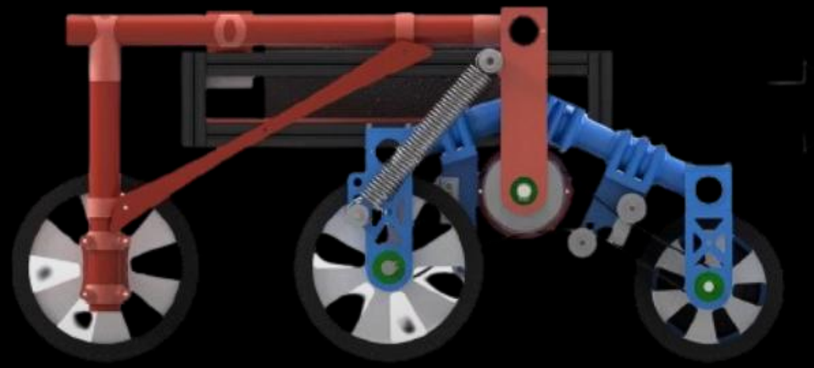
Prototype #2

Prototype #3 (Currently In Development):

We plan on mainly improving our suspension systems and introducing the dashboard along with working on feedback.

A damper-driven rocker-bogie (DDRB) mechanism that enhances mobility using two actuators and a damper, overcoming limitations of previous mechanisms reliant on numerous motors or complex controls for navigating rough terrain or stairs.

Rocker-Bogie Suspension



Prototype #3 (Currently In Development):

Improved interactive, real-time dashboard
(This Website!)

Visit: *https://trequer.vercel.app/dashboard*

Down the Road:

- Optimizing the drive train for faster and more efficient missions
- Automated environment exploration
- Implementing a plug-and-play framework for the addition of custom sensors/technologies as per customer requirements
- Improving the user-experience on the real-time dashboard through: alerts/notifications and a real-time camera feed