



Team

**nveshak**

[http:// anveshak.team/](http://anveshak.team/)

# IIT Madras

IIT Madras is one of India's most prestigious universities and has an excellent track record in producing high quality engineers and researchers.

Through the years, the institute has played a pivotal role in creating an entrepreneurial environment that motivates students to innovate and develop solutions for local as well as global challenges. Students from various disciplines of Engineering, Sciences and Humanities, come together in an unparalleled display of diversity of thought, and skill to create this environment.



# About Us

Prof. Asokan Thondiyath  
*Faculty Advisor for the team*



Team Anveshak, one of the flagship teams of CFI, represents IIT Madras in the Rover Challenge Series, a premier international robotics competition conducted annually for university students, by The Mars Society, USA.

Started in November 2015, Team Anveshak was built on the strength of students who had earlier participated in and won several national competitions such as Robocon (2004 - 2014), ASME (2015) and Inter IIT Tech-meet(2015 and 2016), besides developing projects as a part of the iBot club.

We have successfully completed 2 versions of our rover & had qualified for the University Rover Challenge(URC) 2017 & 2018. Showing a steady improvement, we finished 29<sup>th</sup> & 25<sup>th</sup> in the 2 editions of URC, amongst a pool of more than 90 teams from across the world.



# Team Structure

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graph LR; TS[Team Structure] -- Orange --> CS[Chassis & Suspension]; TS -- Orange --> ST[Science Task & Digger]; TS -- Orange --> MG[Manipulator & Gripper]; TS -- Orange --> CSW[Control Software & Autonomous navigation]; TS -- Orange --> CSys[Communication Systems]; TS -- Orange --> MC[Main Controller Board & Instrumentation]; TS -- Grey --> PBM[Power & Battery Management System]; TS -- Black --> PBM; TS -- Black --> O[Outreach]; TS -- Black --> M[Media]; TS -- Light Orange --> PBM; TS -- Light Orange --> O; TS -- Light Orange --> M;
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Chassis & Suspension

Science Task & Digger

Manipulator & Gripper

Control Software &  
Autonomous navigation

Communication Systems

Main Controller Board  
& Instrumentation

Outreach

Power & Battery  
Management System

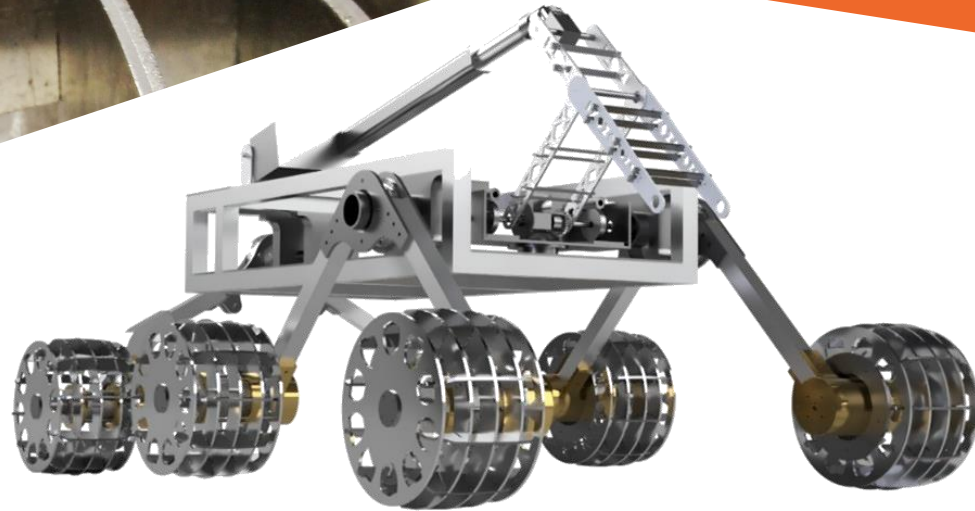
Media

Team Anveshak boasts of a flexible and dynamic team structure that is equipped with well-rounded people working round the clock on building inspiring technologies.





# Aurora

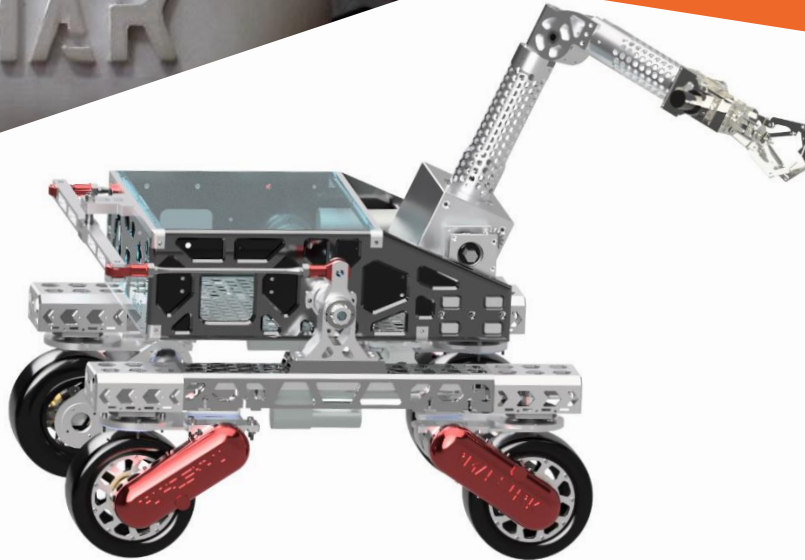


*The first version of our Mars Rover – Aurora (February 2017)*

At Anveshak, we engineer a powerful autonomous rover for space exploration, with utmost passion and precision. **Aurora**, the first version of our Rover, is a great example of efficient design blended with a reliable control and power system. The entire design and fabrication was completed within a tight time-frame of 4 months. The rover's ability to encounter harsh drops makes it remarkable. A heavy-duty robotic arm has been carefully designed and analyzed for equipping the rover with manipulation capabilities.



# Badger



*The second version of our Mars Rover - Badger (February 2018)*

**Badger**, our second rover, features a four-wheeled design incorporating a novel steering mechanism enabling the rover to achieve superior obstacle avoidance. A modular manipulator & an entirely fastener free gripper are key highlights of our innovative design processes. With a more robust electronics architecture and quality hardware, the rover can be reliably operated from a distances of up to 1.5 kilometres. The rover received critical acclaim at URC 2018 for it's innovative design.



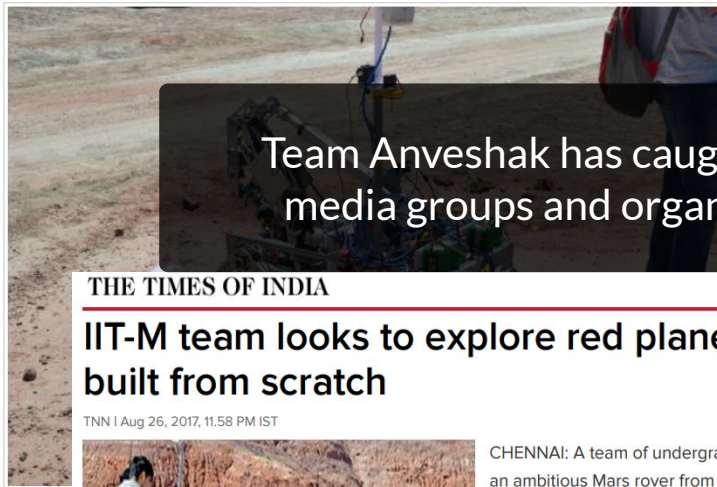
# Media

indiatoday 

## Meet Aurora 2902, a robot rover built by IIT-Madras students to assist astronauts on Mars

Aurora 2902 is a state-of-the-art rover built for a competition conducted by the prestigious Mars Rover Society.

 Pramod Madhav | Edited by Ganesh Kumar Radha Udayakumar  
Chennai, August 17, 2017 | UPDATED 18:19 IST



Team Anveshak has caught the attention of numerous media groups and organizations for its rover design

THE TIMES OF INDIA

## IIT-M team looks to explore red planet with Mars rover built from scratch

TNN | Aug 26, 2017, 11:58 PM IST




CHENNAI: A team of undergraduate students from IIT-Madras are building an ambitious Mars rover from scratch. Only weeks ago, their prototype was tested at the Mars Desert Research Station (MDRS), in Utah, USA. Come next year, an improvised version of the rover will participate in a competition conducted by The Mars Society, an international organisation, competing against the best student-made rovers across the globe. The rover 'Aurora', hand-picked alongside 34 other models at the competition in July, was tested on the rough, dusty terrain at Hanksville (Utah), the closest imitation to Mars' rocky topography. The prototype had received an initial alumni funding of Rs 3 lakh and will head to competition again next year, aiming for a victory.

The prototype, which is being built almost entirely by hand at the institute's Center for Innovation (CFI), incorporates various technologies and has a diverse team of students from various disciplines building it. With myriad parts including motor-fitted wheels, linear actuator to allow it to move in sharp angles and onboard mini-computer (Raspberry Pi), the rover aims to collect

THE  NEW  
**INDIAN EXPRESS**

## IIT-M ready with this year's talent

By Express News Service | Published: 09th October 2017 02:39 AM |  
Last Updated: 09th October 2017 07:39 AM | A+ A A- 



Team Anveshak with Aurora the Mars Rover;

CHENNAI: From palm-sized electronic circuits that can control drones to a prototype Mars rover that can navigate rough terrains, over 40 projects designed by students were lined up for demonstration at the Centre For Innovation (CFI) at the IIT-M on Sunday. The projects were up for public display during 'CFI Open House' - an annual event showcasing the recent work and achievements of student innovators within their campus.

This year, open house displayed the work of three



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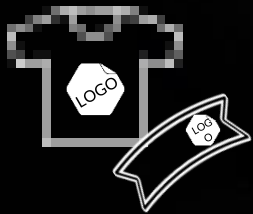
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Travel for URC 2019

## What we have for you

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**think3D**

Contribute through our website

<http://anveshak.team>

OR

Reach us back through  
[teamanveshak@smail.iitm.ac.in](mailto:teamanveshak@smail.iitm.ac.in)



# Thank You!

