



Learn more about  
what we do!  
[many.link/nus\\_seds](https://many.link/nus_seds)



Join us!  
[tinyurl.com/joinnusseds](https://tinyurl.com/joinnusseds)

# NUS SEDS e-SLF Chat!

National University of Singapore  
Students for the Exploration and Development of Space

Welcome to NUS Space Club's e-SLF Chat! This is a central meeting room where you can be assigned into individual breakout rooms for the following projects:

1. Autonomy
2. Policy
3. Rocket
4. Rover

Please do remember to add [Project you are interested in] to the start of your Zoom Name to help us add you into the correct breakout room!

e.g. If I am interested in Rover, then my Zoom name should be [Rover] Dean Su

Please also feel free to ask questions in the chat for the common meeting room, if you have any or are unclear on which projects you might be interested in!

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# Students for the Exploration and Development of Space

- largest student-run space organisation
- non-profit
- promote space exploration and development
- projects, events and programmes
- alumni: Jeff Bezos, Steve Wozniak and Peter Diamandis



# We come in Peace

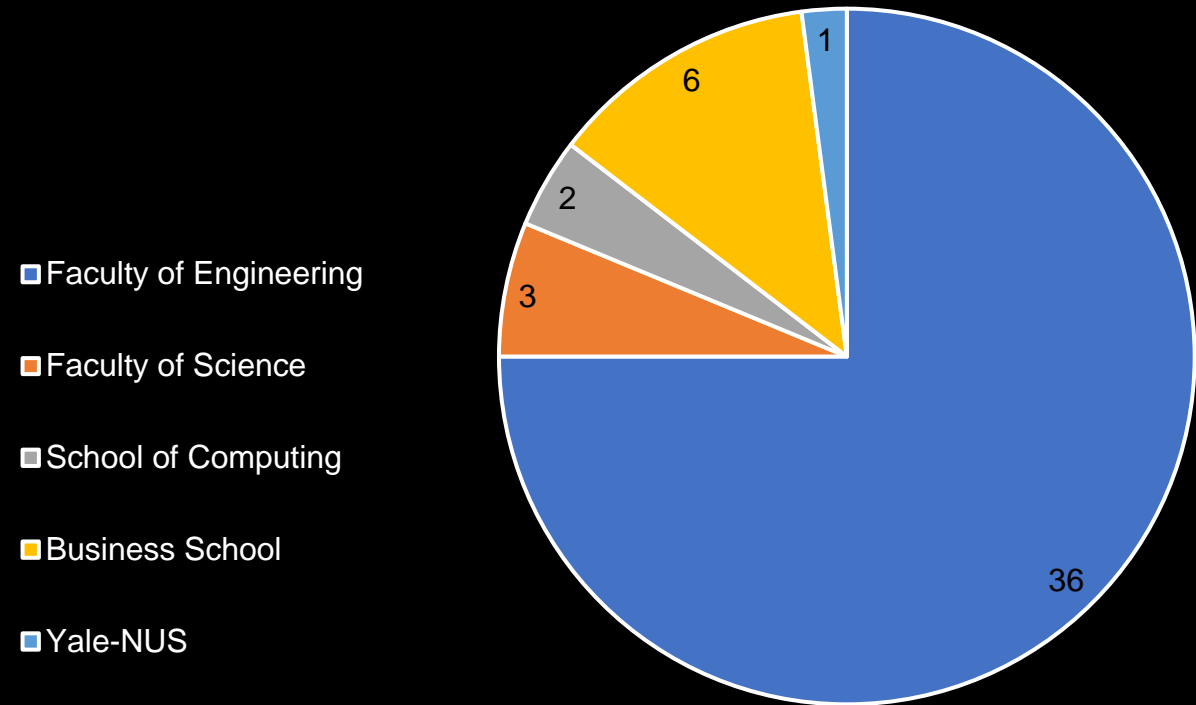
- Officially launched 20<sup>th</sup> July '19, 50<sup>th</sup> anniversary of Apollo 11
- As of Jul '20, nearly 70 members
- 2 event series
  - talks
  - workshops
- 3 engineering teams
  - remotely operated vehicles
  - autonomous vehicles
  - rocketry team
- 1 space policy unit



# Diverse and Passionate

- 51 students from a diversity of faculties, working on different projects that allows them to apply their academic knowledge to practical settings.
- Future recruitment oriented towards greater faculty diversity.

Member Breakdown by Faculty





## Vision

To be the **rallying youth force**  
that ushers in a **new space age**  
in **Singapore**  
and **South East Asia**

## Mission

To **inspire and empower young people**  
in **NUS and beyond**  
to **participate and make an impact**  
in **space exploration**







# Staff Advisors

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- We are fortunate to have the guidance of our advisors:
- Professor **Low Kay Soon**, Department of Electrical and Computer Engineering, FoE
- Mr. **Eugene Ee**, Innovation & Design Programme (IDP)





# Our Activities



# New Frontiers

Talks • Free • Public • Pizzas\* • Thursdays  
• ~20 members per session

NUS SEDS X AKSHAY GULATI

## AUTONOMOUS RENDEZVOUS AND DOCKING OF SATELLITES

E2A Studio 2, Faculty of Engineering  
Thursday, 5 September 2019  
6.30 to 8.30 pm

NUS SEDS X AKSHAT DUBEY

## LASER COMMUNICATIONS

E2A Studio 2, Faculty of Engineering (tentative)  
Thursday, 12 September 2019  
6.30 to 8.30 pm

NUS SEDS X PETER CECIL

## GOOGLE EARTH ENGINE

E2A Studio 2, Faculty of Engineering  
Thursday, 3 October 2019  
6.30 to 8.30 pm

NUS SEDS X ROLAND TURNER

## SATELLITE TRACKING FROM PORTABLE GROUND STATIONS

E2A Studio 2, Faculty of Engineering  
Thursday, 19 September 2019  
6.30 to 8.30 pm

NUS SEDS X KHENG MENG

## JOURNEY TO BECOME A PRIVATE PILOT

E2A Studio 2, Faculty of Engineering  
Thursday, 10 October 2019  
6.30 to 8.30 pm

NUS SEDS X MARK LIM

## SPACECRAFT PROPULSION SYSTEMS

E2A Studio 2, Faculty of Engineering  
Thursday, 24 October 2019  
6.30 to 8.30 pm

NUS SEDS X BIDUSHI BHATTACHARYA

## SPACE ENTREPRENEURSHIP

E2A Studio 2, Faculty of Engineering  
Thursday, 31 October 2019  
6.30 to 8.30 pm

NUS SEDS X GALLASIA

## CUBESAT MISSIONS HOW STUDENTS CAN PUSH FORWARD IN SPACE

The Hangar, i3 Building, NUS  
Thursday, 30 January 2020  
7:30 PM Onwards

*All majors are invited!  
Refreshments provided from 7 PM onwards*



# New Horizons

Workshops • Free • Public • Mondays\*

## NUS SEDS X AGI INTRO TO STK

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ASTROGATOR +  
CONJUNCTION ANALYSIS  
TOOL

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MONDAY, 7 OCTOBER  
6.30 TO 8.30 PM  
NUS (LOCATION TBC)

SIGN UP  
<https://bit.ly/2nPfOvi>

DS X AGI

## ATPRO

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TK SATPRO  
UBESAT  
SIGN

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14 OCTOBER

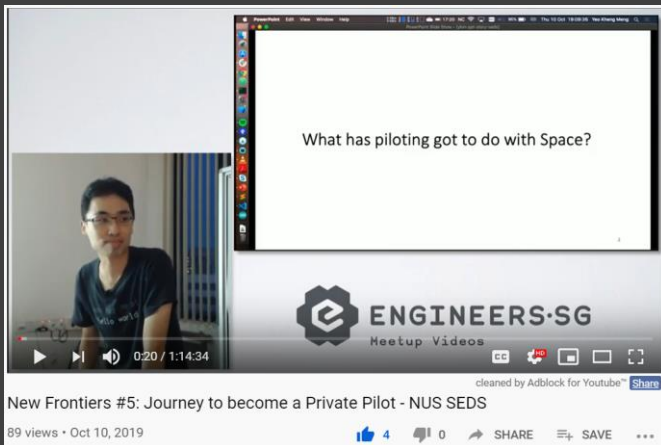
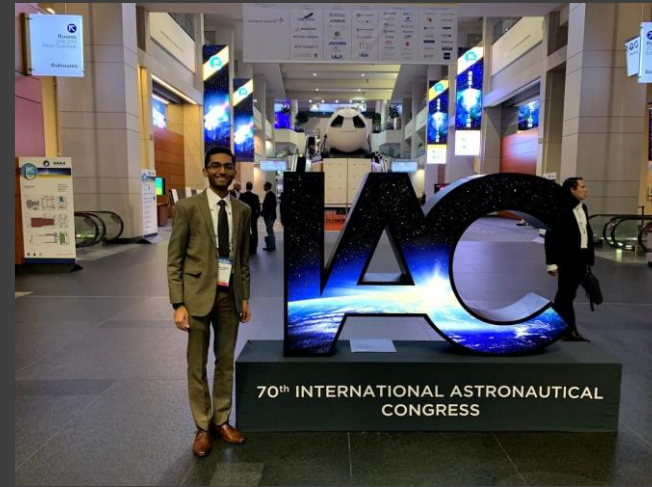
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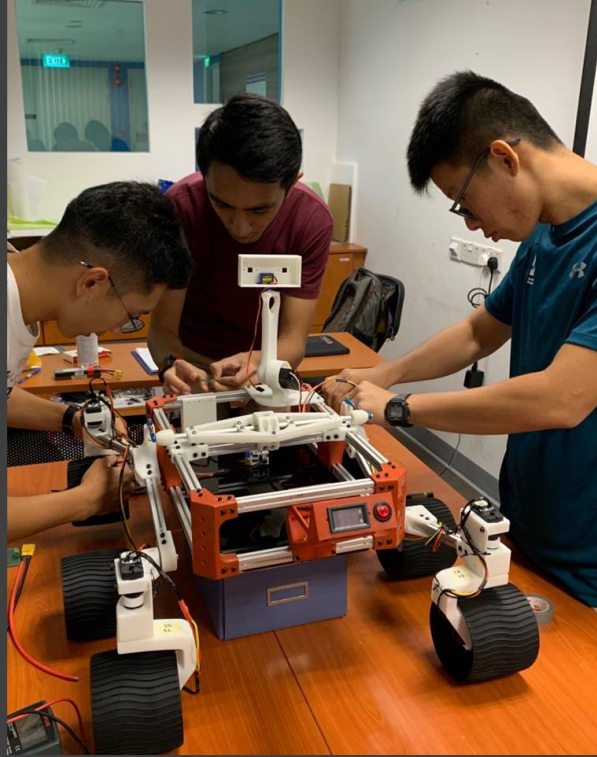
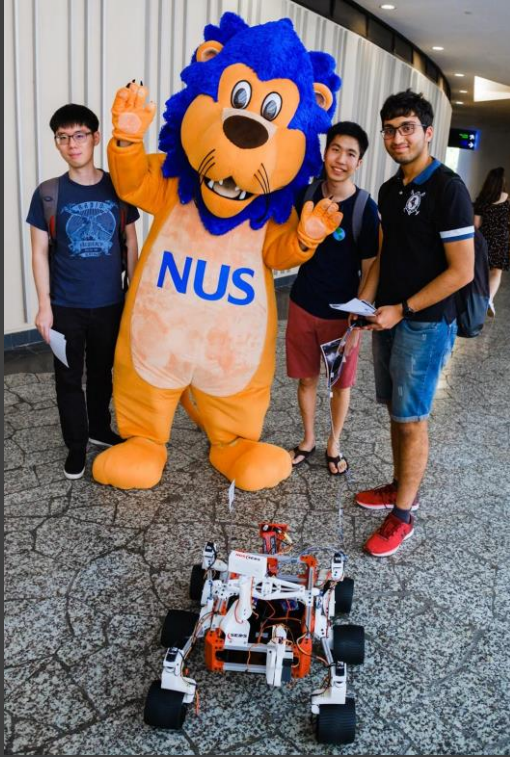
C AND STUDENTS

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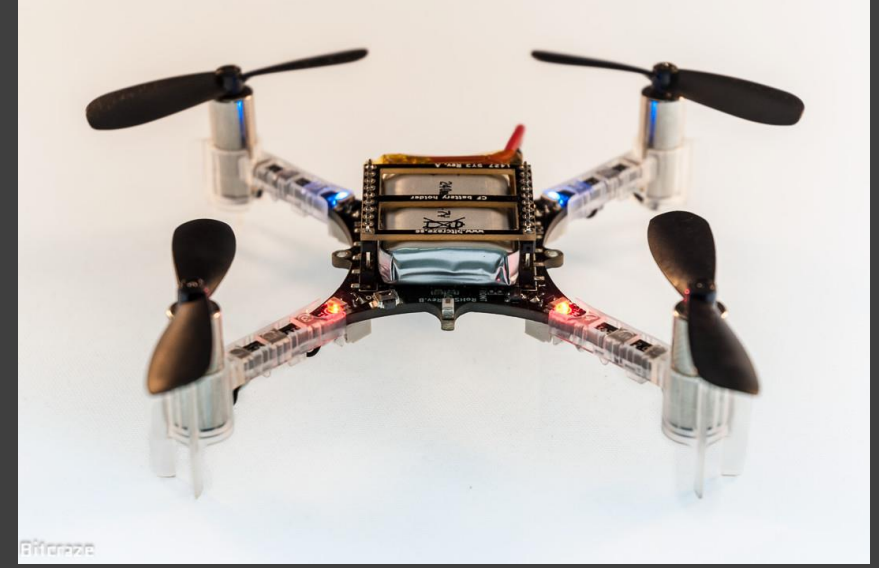
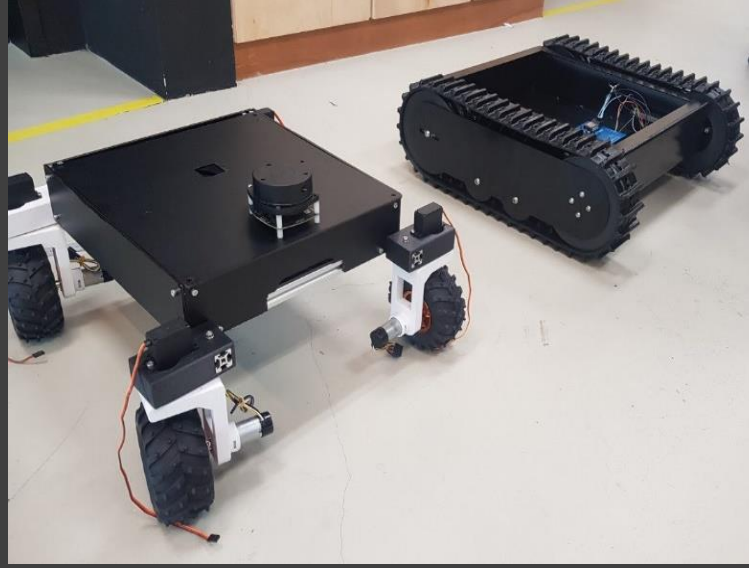




# NUS Rover Team

Developing next-generation  
**Mars rovers** that will one day  
**work alongside human explorers in the  
field**

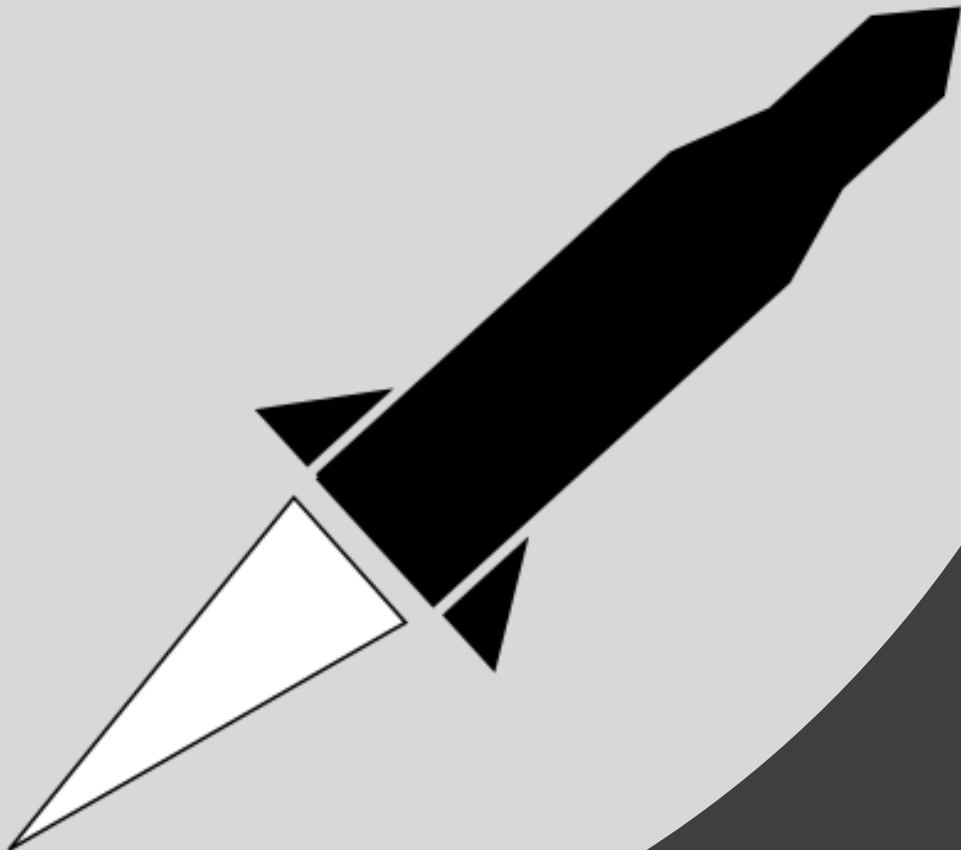
- University Rover Challenge
- New Spirit and New Opportunity
- Only team from South East Asia to have cleared URC's Preliminary Design Review
- Competing against Stanford, Cornell, IITs, and other international teams



# DARPA SubT Team

Developing next-generation **robotic swarms** that can produce a **full 3D map of an underground space**

- DARPA SubTerraanean Challenge
- Multiple fully autonomous ground and aerial vehicles working in tandem
- One of 17 teams worldwide to have qualified for the Urban Circuit, against 22 competitors
- Competing against NASA, CMU, ETH Zurich
- Next milestone: Virtual Cave Circuit challenge



# SEDS Propulsion Lab (SPL)

- **Goal:** To design a high power chemical rocket to participate in the Spaceport America Cup competition and through the process spin off technology groups to further research and advance subsystems.
- **Timeline:**
  - AY 2020/2021: Mission Design and Systems Sizing
  - AY 2021/2022: Assembly, Integration and Testing
- **Competition:** Spaceport America 2022
- **Projected Number of Students:** 40-50



# Space Policy Unit (SPU)

- **Goal:** To advance the cause of space through the study, proposal and development of policies.
- **Current Work:** To create a comprehensive public study comprising of insights from various stakeholders in the space industry in Singapore, and recommend policy based on that.
- **Timeline:**
  - AY 2020/2021: Landscape Study, Space Law Mooting Competition Team

# Space Hangouts and Launch Parties!

- Opportunity for NUS space community to get together and share our love for space
- Events:
  - Welcome Tea
  - SpaceX Crew Dragon Demo-1 Launch Party
  - Ad Astra movie outing
  - And more to come!



# NUS SEDS Partnerships



Project Workspace

E1A by NUS ARC  
Makers@SoC



Event venue and Promotion

NUS Enterprise



In-kind product sponsorship  
and loaning of tools

Valispace  
Maxon Motors (discount)  
Alien Power System



Collaboration with Space  
Policy Unit

Office for Space Technology and  
Industry (OSTIn) @ EDB  
SEDS-SG



Collaboration with SEDS  
Propulsion Lab

SEDS-NTU



Public Outreach

Hatch.SG



Documentary Features

Channel News Asia



# Follow us!



Youtube:

- 25 subscribers
- Videos of New Frontiers talks and other SEDS events and accomplishments



Telegram: <https://t.me/nusseds>

- 100 members
- Open to the community and serves as a platform for all things space-related



Facebook: <https://www.facebook.com/nusseds>

- 350 followers
- Used for announcements.



Instagram: [https://www.instagram.com/nus\\_seds/](https://www.instagram.com/nus_seds/)

- Used for personal posts, community engagement



Website: <http://www.nusseds.space>

- Articles and a blog containing space content.

Only those who will risk going  
too far can possibly find out  
how far one can go.

*TS Eliot*





**Thank you.**



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