



UNISEC-EGYPT: Working Through COVID-19

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Outline

- **History of UNISEC-EGYPT.**
- **UNISEC-EGYPT 2020-2021 activities.**
- **Future Plan.**



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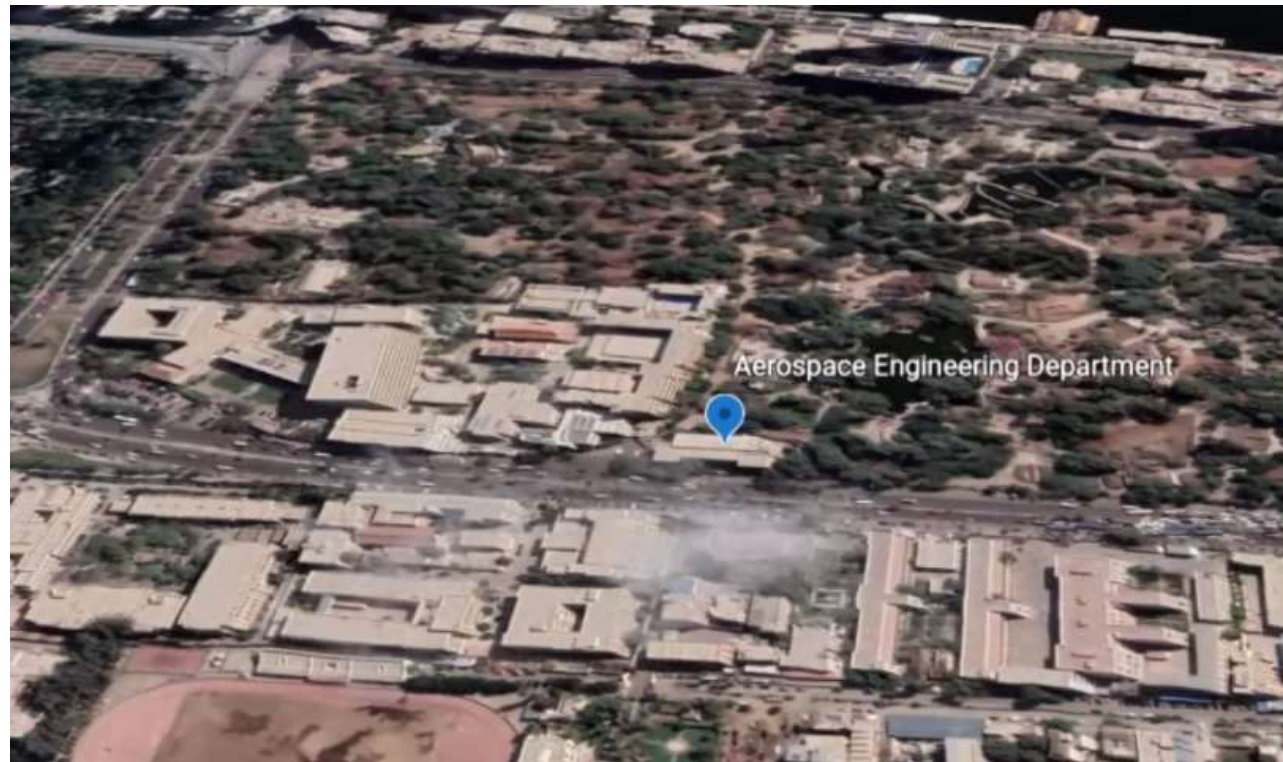


History

- SSTLab (established in 2011) is the host of All Unisec-Egypt (established in 2014) activities in Cairo



Aerospace Engineering Building



SSTLab



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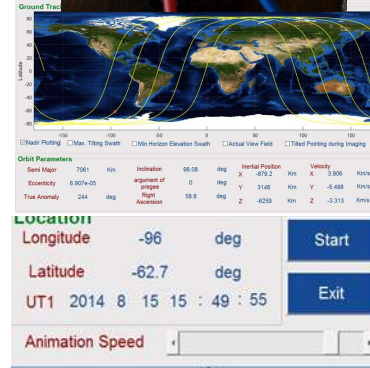
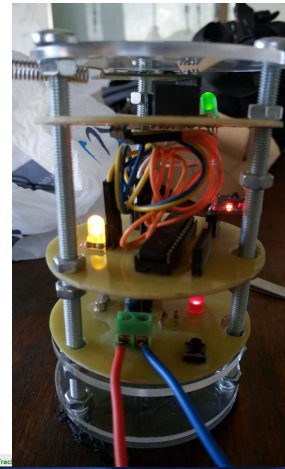


History

We have been working on :

CanSat Training Program

Twelve CTP's 300+ students

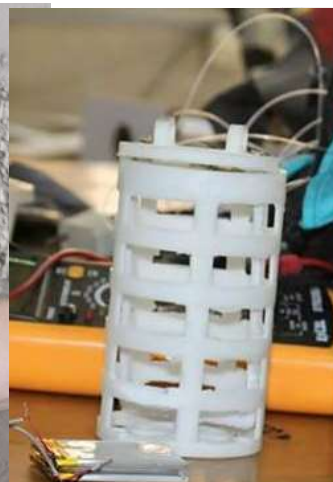


Aerospace Engineering Department, Cairo University



CanSat Training (CTP1-CTP12)

- Program open to engineering students from all Egyptian universities.



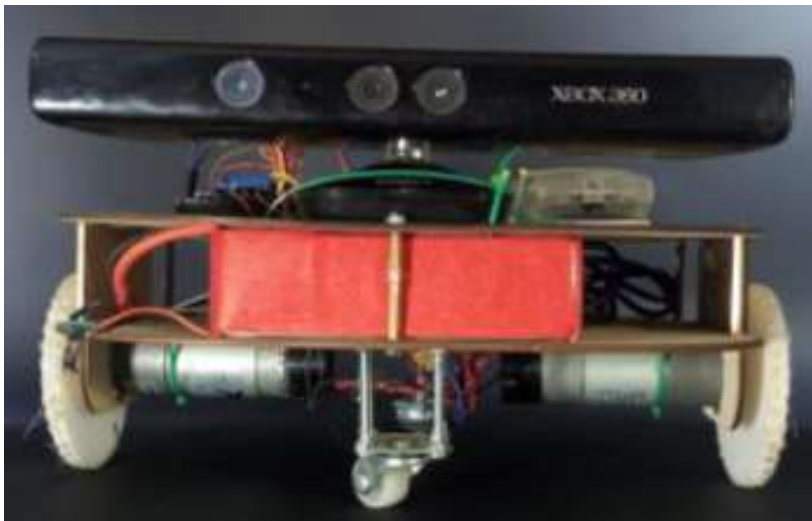
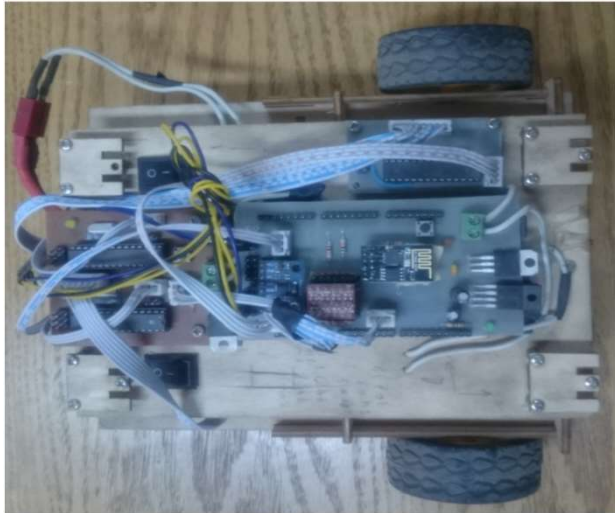


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History

Space Rover Program





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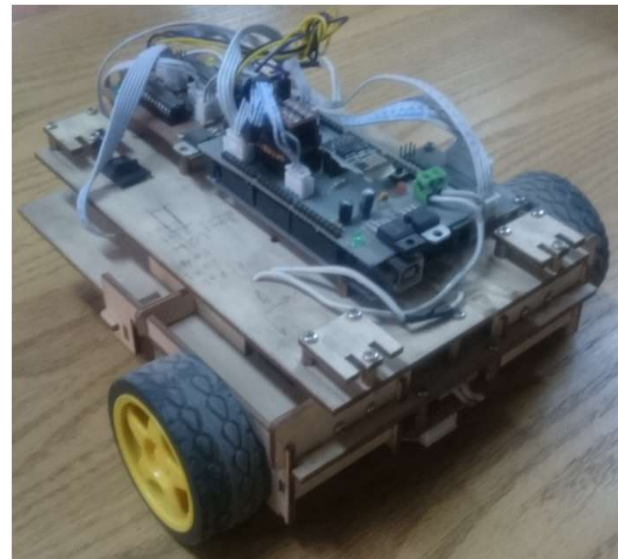
History

Space Rover Program

Size , (wheels or tracks)



Networking and formation



(a) $t = 0$ sec



(b) $t = 1.4$ sec

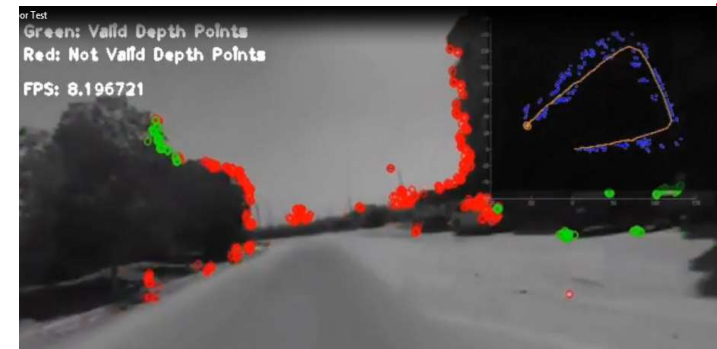
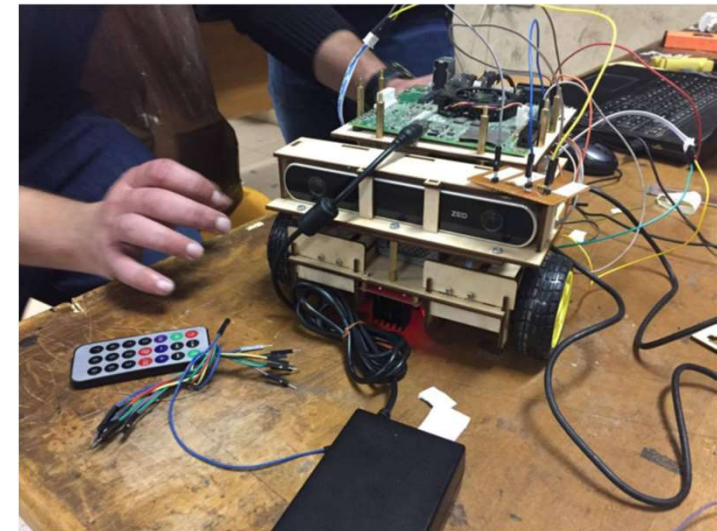


(c) $t = 3.25$ sec



(d) $t = 5$ sec

simultaneous localization and mapping (SLAM)





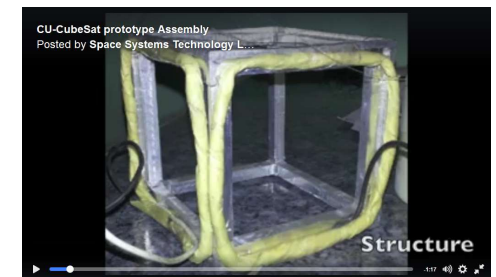
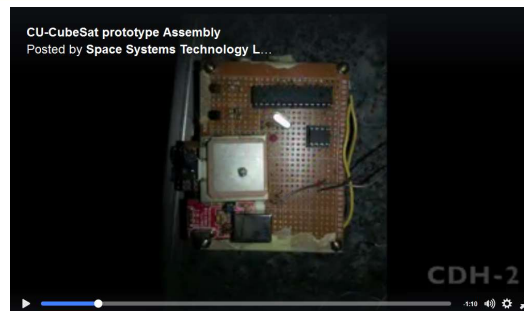
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History

CubeSat Program

4 Iterations working on different subsystems





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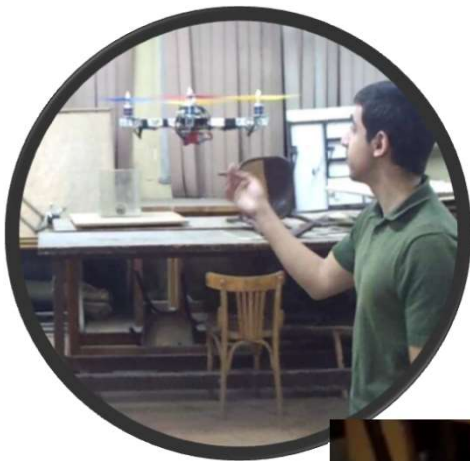


History

We have been working on :

Quadcopter/Octocopter Program

Basically for launching testing cansats

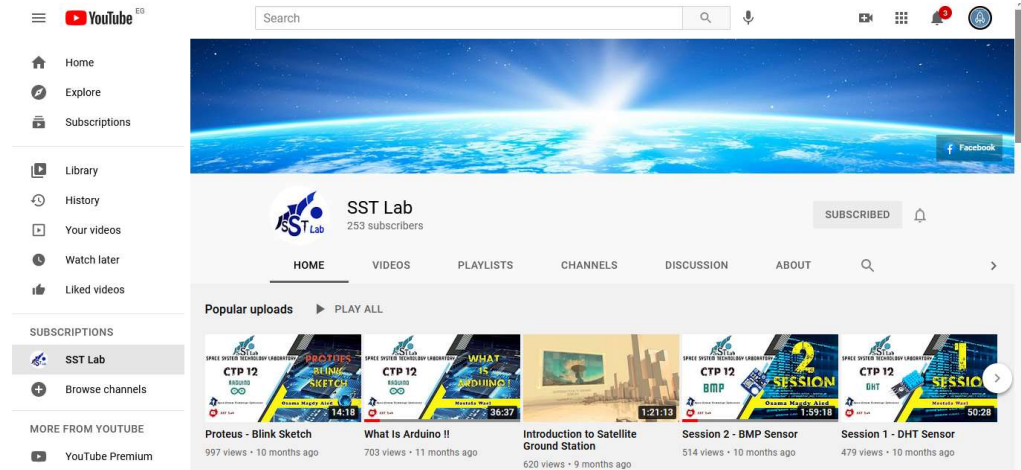


UNISEC-EGYPT 2020-2021 activities

- **Online CanSat Training Program**
- **Online STEM Training Program**
- **CubeSat iteration 5.**
- **Space Rover.**

Online CanSat Training Program

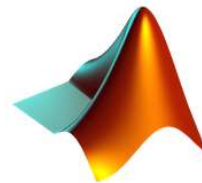
- 30 videos (18 hrs) covering all required material.
- 270 registered students.
- 70 students finished the training.



SolidWorks



Arduino



Matlab



ALTIUM



LabVIEW



Diptrace



Proteus

Online STEM Material (Aerospace 4 Kids)



Search



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Aerospace 4 Kids

106 subscribers

CUSTOMIZE CHANNEL

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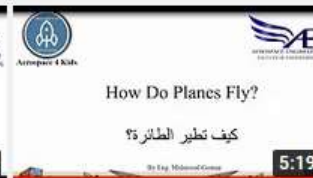
how to make a Paper Airplane
كيف تبني طائرة ورقية

No views • 3 minutes ago



Spectroscope (محلل الضوء)

6 views • 1 hour ago



How Do Planes Fly? كيف تطير الطائرة?

38 views • 4 hours ago



Building a simple aircraft model for kids' desk

213 views • 1 week ago



What an Aerospace...

89 views • 1 week ago

SUBSCRIPTIONS

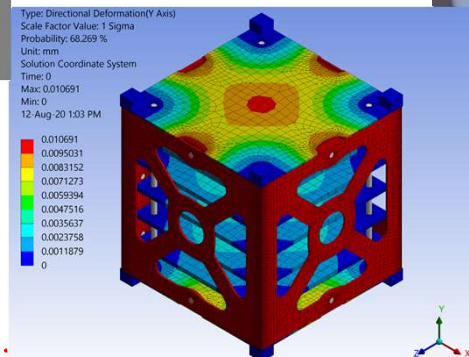
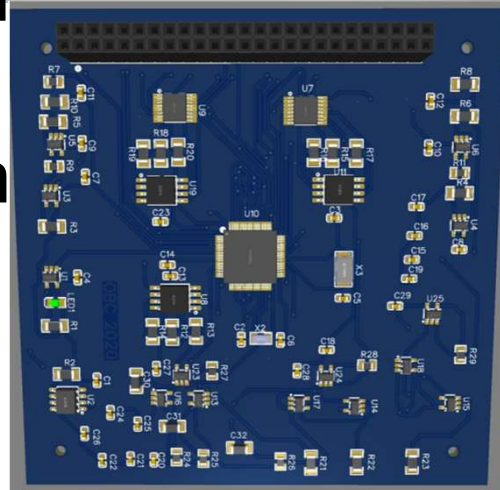
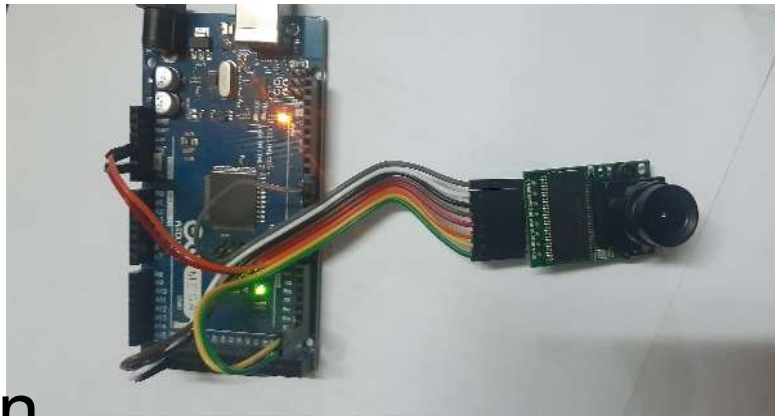
- SST Lab
- Browse channels

MORE FROM YOUTUBE

- YouTube Premium

CubeSat iteration 5

- We still need two more iterations.
- Still working on the ADCS communication and the integration
- Hope we can launch in 2024

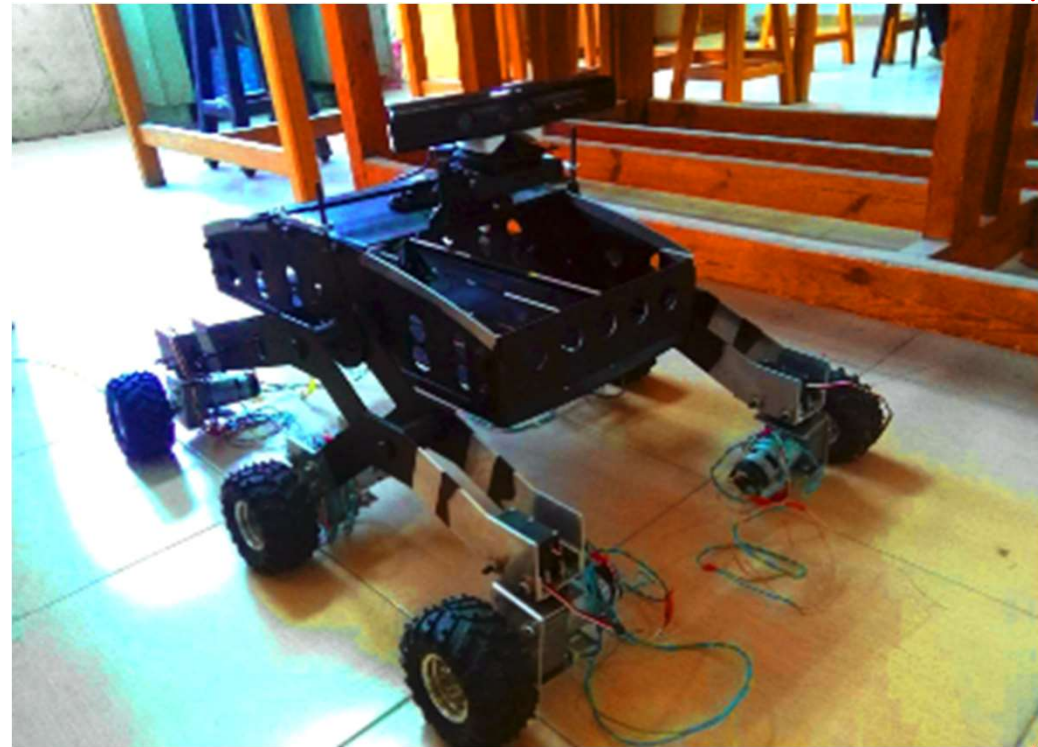


Space Rover

Our Space Rover team has worked through the academic year of 2020/2021 on Modeling, Design and Fabrication of the third iteration of the Space Rover for Autonomous Exploration.

Working on:

- SLAM.
- Object Recognition.
- And added a robotic arm



Plan for 2022 and beyond

- *Continue Cansat and Rover education for students.*
- *Sixth iteration of Cubesat design (hoping it will be the final iteration).*
- *Cooperate with the Egyptian space agency and the newly established African Space agency.*
- *Upgrade our Space systems and technology lab with support from Cairo University, EGSA and Boeing.*
- *Launch Cairo-Sat first university satellite in Egypt (estimated 2024).*



thank
you