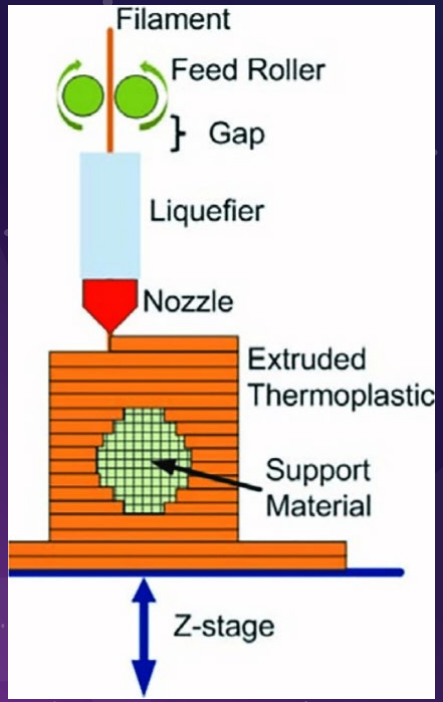
Lunar Base 3D Printing Robot

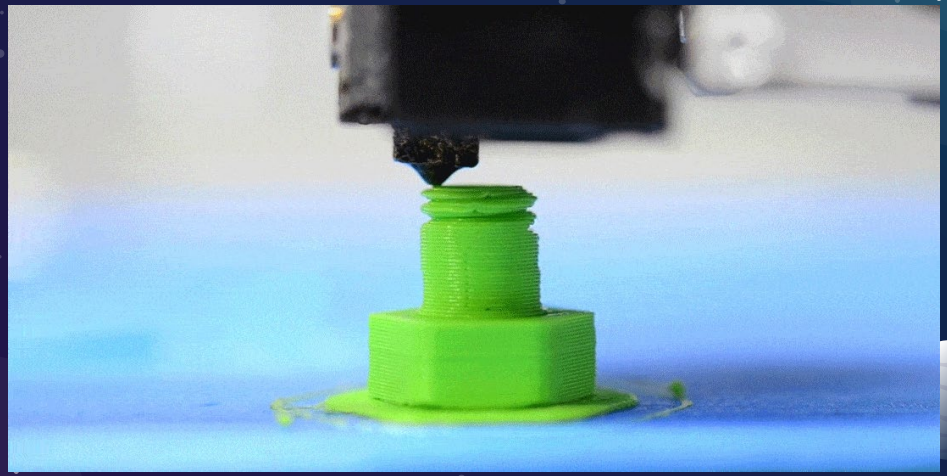
GitHub


Want to Build a
Moon Base? Easy.
Just Print It!


1.
Project Overview
3D printing Concept

How A 3D Printer Works

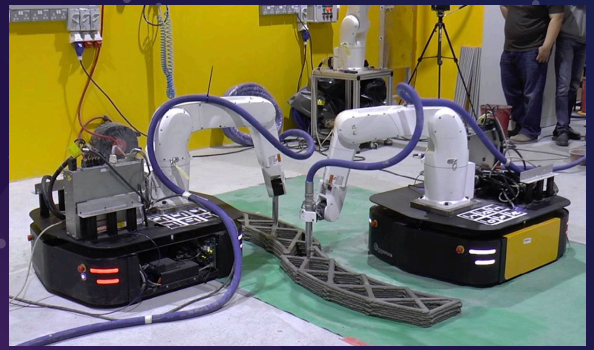


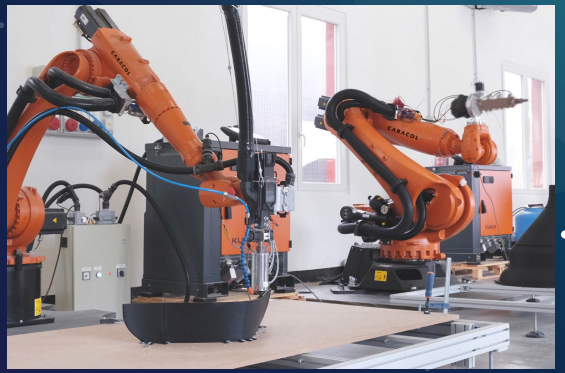


Different types of 3D Printing robots

Large scale Robotic 3D Printed Furniture

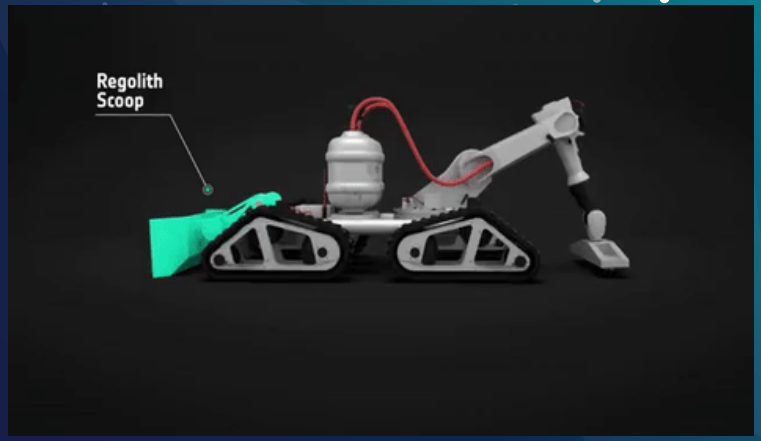
Mobile Robots 'Swarm Print' 3D large scale structures



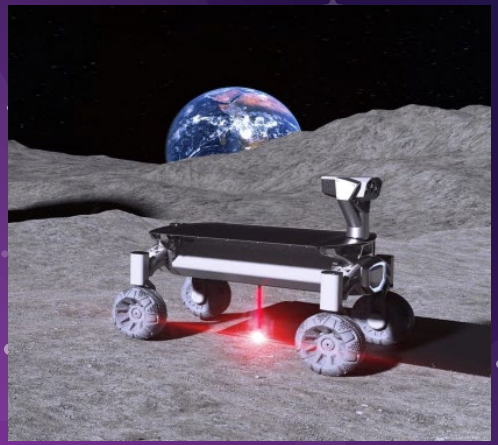


KUKA 3D Printing technology used to manufacture large scale pieces

Project Olympus-NASA



3D Print Robot-ESA

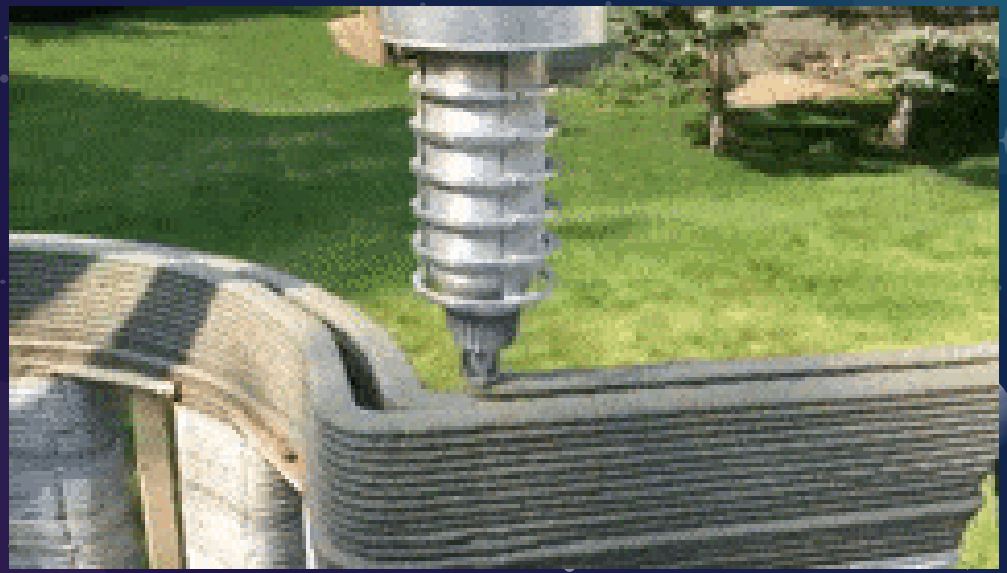


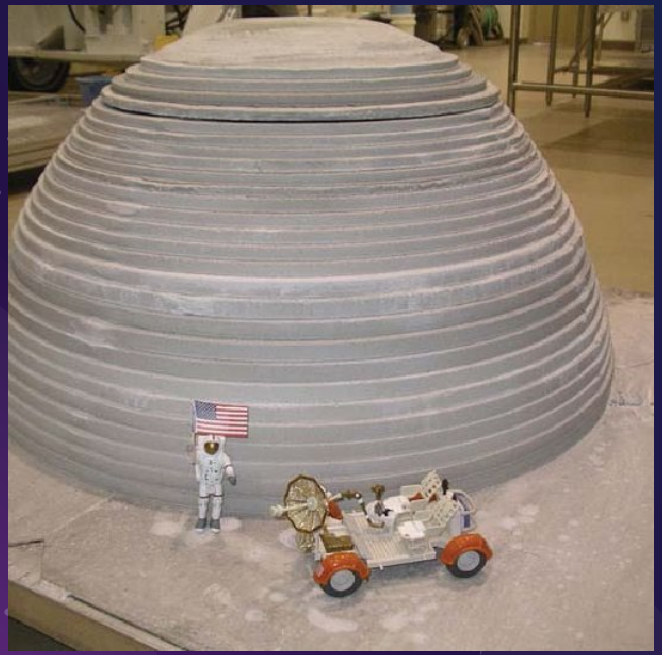
PROJECT MOONRISE:

This technique involves using a laser to turn a very small amount of energy into heat that can melt and fuse together grains of regolith to form a thin but solid slice of the material. By repeating this process multiple times and adding more layers in sequence, we can eventually build a three-dimensional object.

Contour Crafting Technology

The basic CC technology, works using layering of paste material extruded through a nozzle which is maneuvered by a gantry or a mobile robot. Automated building technology such as Contour Crafting is critical to improving astronaut safety in construction scenarios.

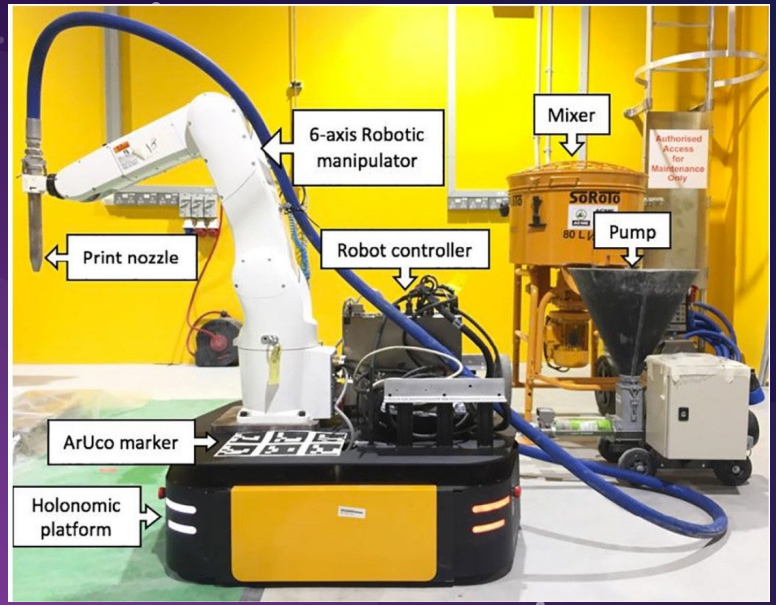


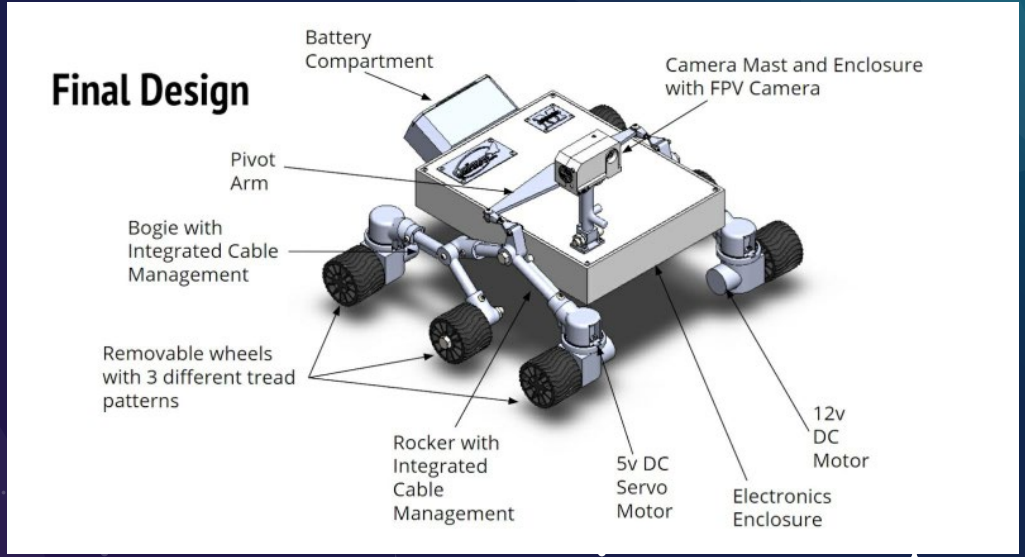


Prototype of Lunar Dome structure printed with CC technology

CC nozzle with co-extrusion building walls with corrugated fill

Robot features

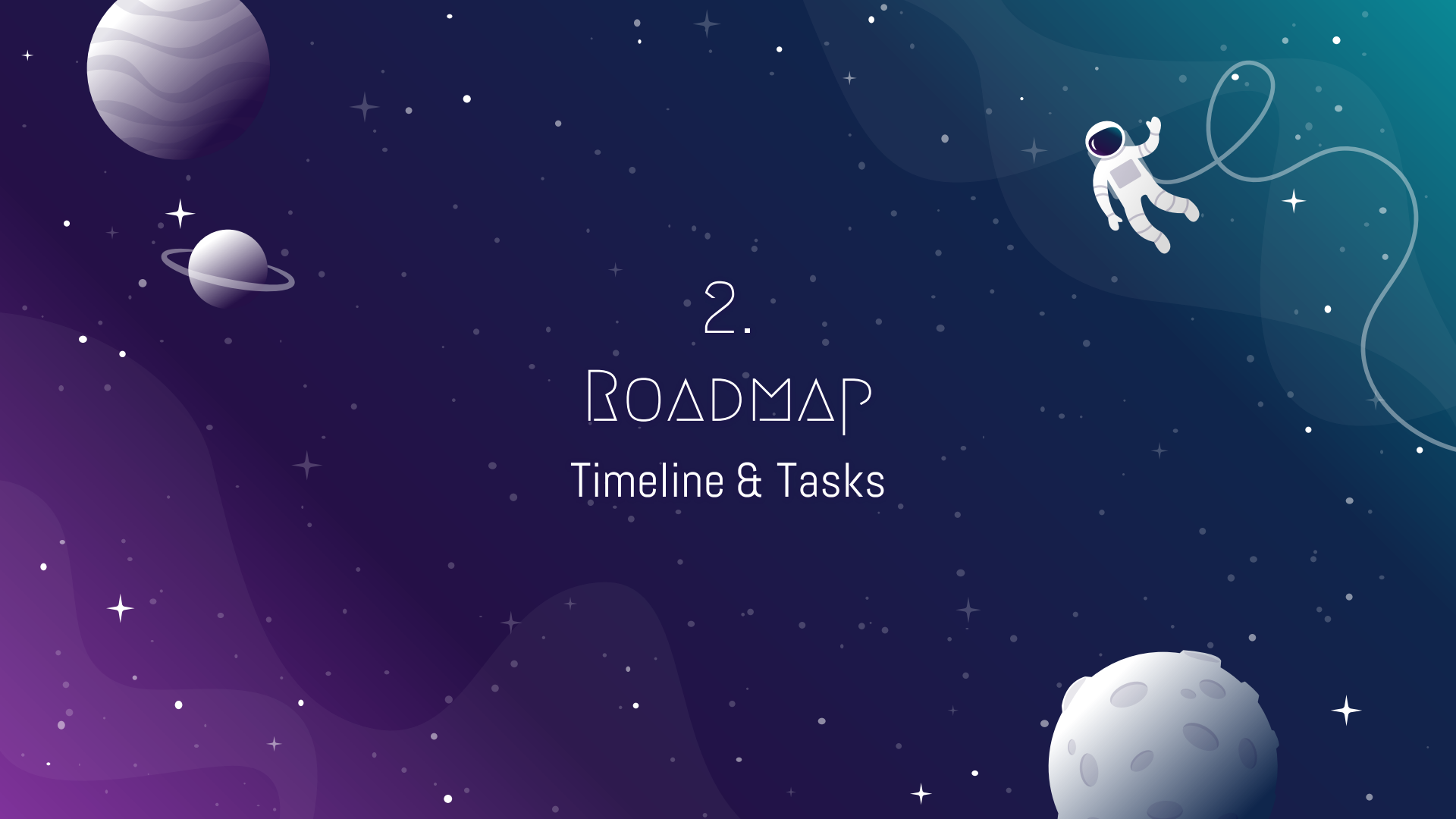




3D Modeling & Simulation Tools

3D Modeling

Simulation Engines

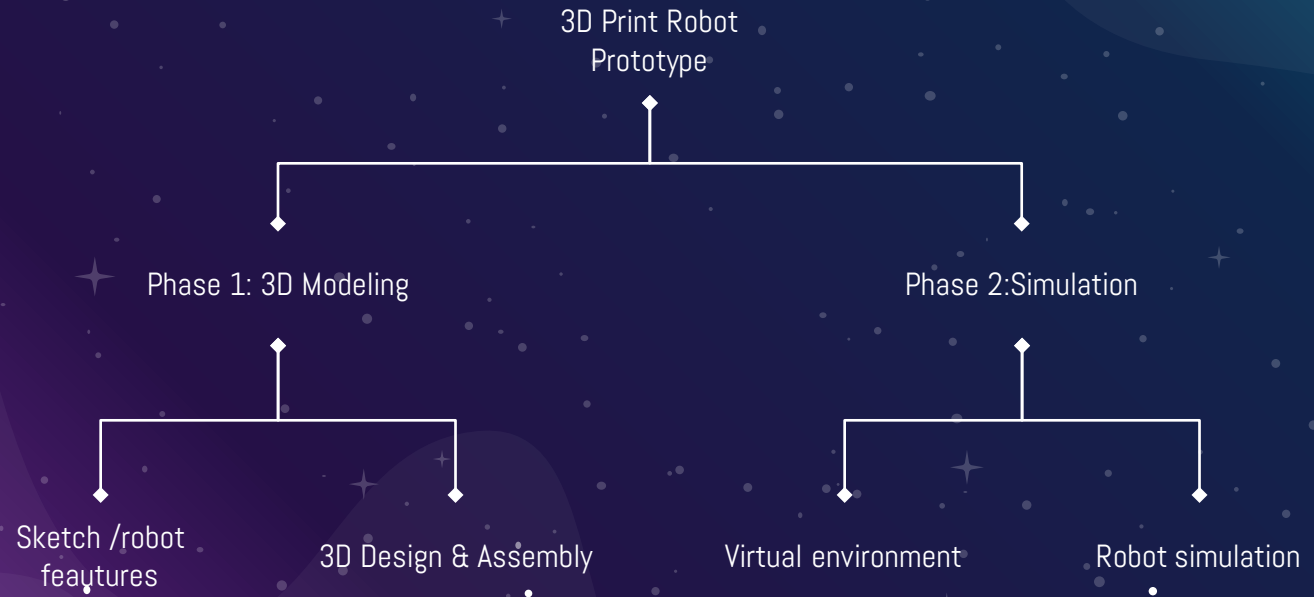


2.
Roadmap
Timeline & Tasks

Roadmap

1. Getting Started
2. Meeting 2: 3D model
3. Meeting 3: Robot simulation environment
4. August 22nd: Project Poster deadline
5. Continue with improving the prototype
6. **August 26th: AJCC**

Getting Started



Task Distribution

	Week 1							Week 2						
	15 AUG	16 AUG	17 AUG	18 AUG	19 AUG	20 AUG	21 AUG	22 AUG	23 AUG	24 AUG	25 AUG	26	-	-
Task 1:Robot sketch														
Task 2:Robot Features														
Task 3:Base Assembly														
Task 4:Arm Assembly														
Task 5: Virtual Environment														
Task 6: Robot Simulation														
Task 7:														
Task 8														

THANKS!

ANY QUESTIONS?

Weekly Planner

	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
09:00 - 09:45	Task	Task	Task	Task	Task	Task	Task
10:00 - 10:45	Task	Task	Task	Task	Task	Task	Task
11:00 - 11:45	Task	Task	Task	Task	Task	Task	Task
12:00 - 13:15	✓ Free time	✓ Free time	✓ Free time	✓ Free time	✓ Free time	✓ Free time	✓ Free time
13:30 - 14:15	Task	Task	Task	Task	Task	Task	Task
14:30 - 15:15	Task	Task	Task	Task	Task	Task	Task
15:30 - 16:15	Task	Task	Task	Task	Task	Task	Task