Project ID:		**Client:**	Marc Carmichael
Project Title:	Lunar Regolith Excavation and Rock Clearing	**Affiliation:**	UTS Rover Team

Description:
The UTS Rover Team is a student led semi-autonomous rover team that competes in the Australian Rover Challenge (ARC) every year, against 20+ teams from around the world. The excavation and construction task is a challenge that tests the team's ability to relocate lunar soil (regolith) and a set of rocks of varying sizes.

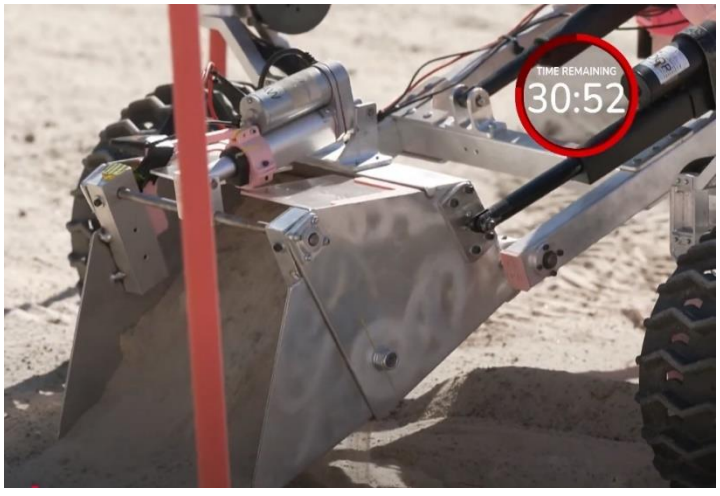
Berm Construction: The excavation subsystem must be able to excavate and deliver lunar regolith to a designated area (2 meters in length and 0.7m in width).

Rock Clearing: Rocks must be removed from a designated area and placed into a collection zone no more than five meters away, there are 6 rocks varying in size from 1kg and 8x8x8cm to 10kg and 17x17x17cm.

In order to build a competition ready subsystem, simplicity and robustness must be prioritised. Bent sheet metal and will likely play a key role in the design of this subsystem.

Deliverables:

- CAD design and drawings of the Excavation subsystem and integration with the rover chassis.
- Mechatronics solution for actuating and controlling the subsystem, including electronics and control software.
- Manufacturing – once mechanical design is completed and approved complete manufacturing, testing and validation of system in conjunction with UTS Rover Team.



Skills Required	Not required at all	Might be required	Some experience required	Moderate experience required	Significant experience required
Mechanical engineering				**X**	
Mechatronic engineering			**X**		
Electronics			**X**		
Programming			**X**		
Hands-on manufacturing			**X**	**X**	
CAD (e.g. Solidworks)					**X**
Artistic Design	**X**				