Jehan Percy Birdy

Design Portfolio

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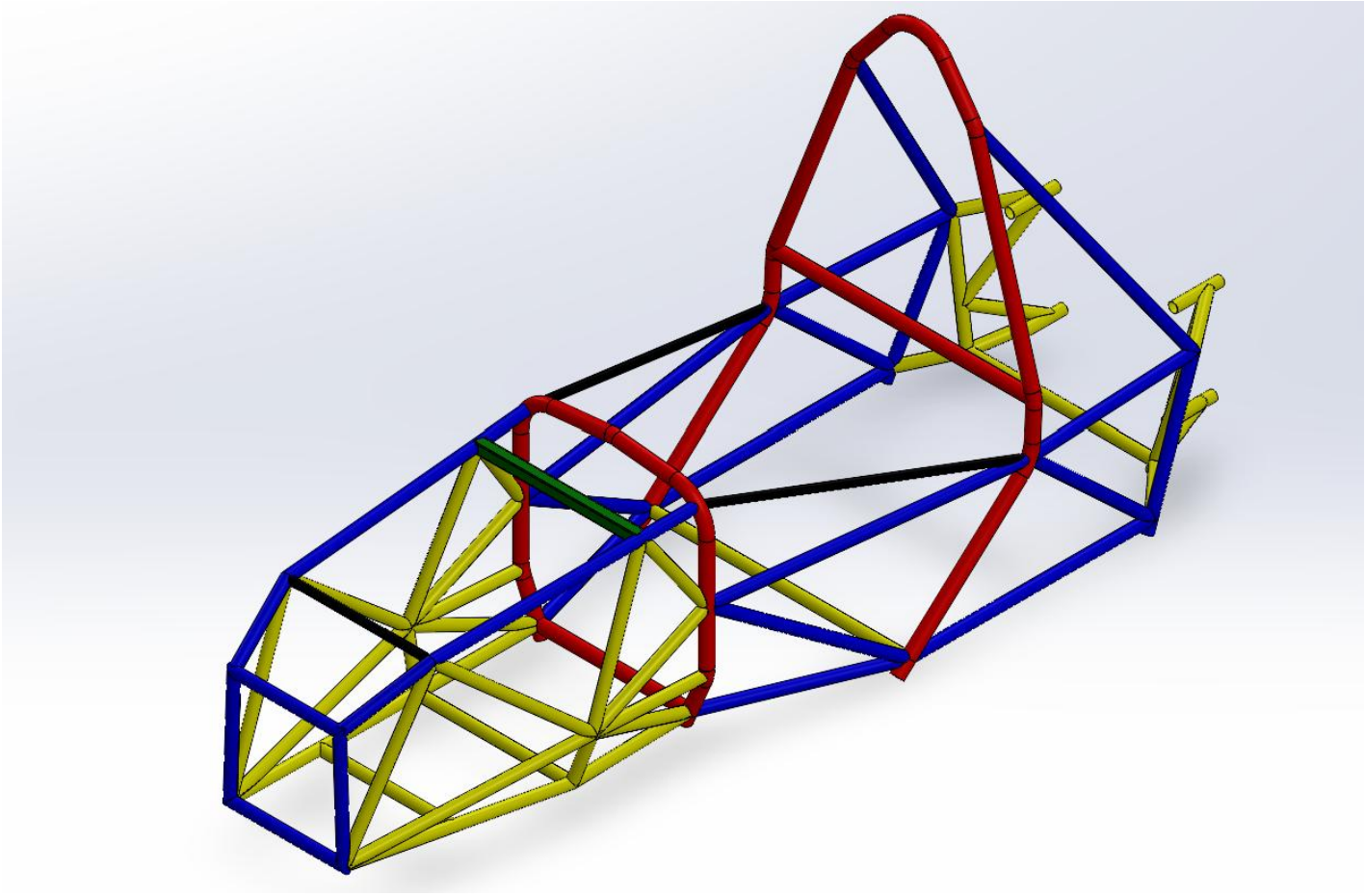
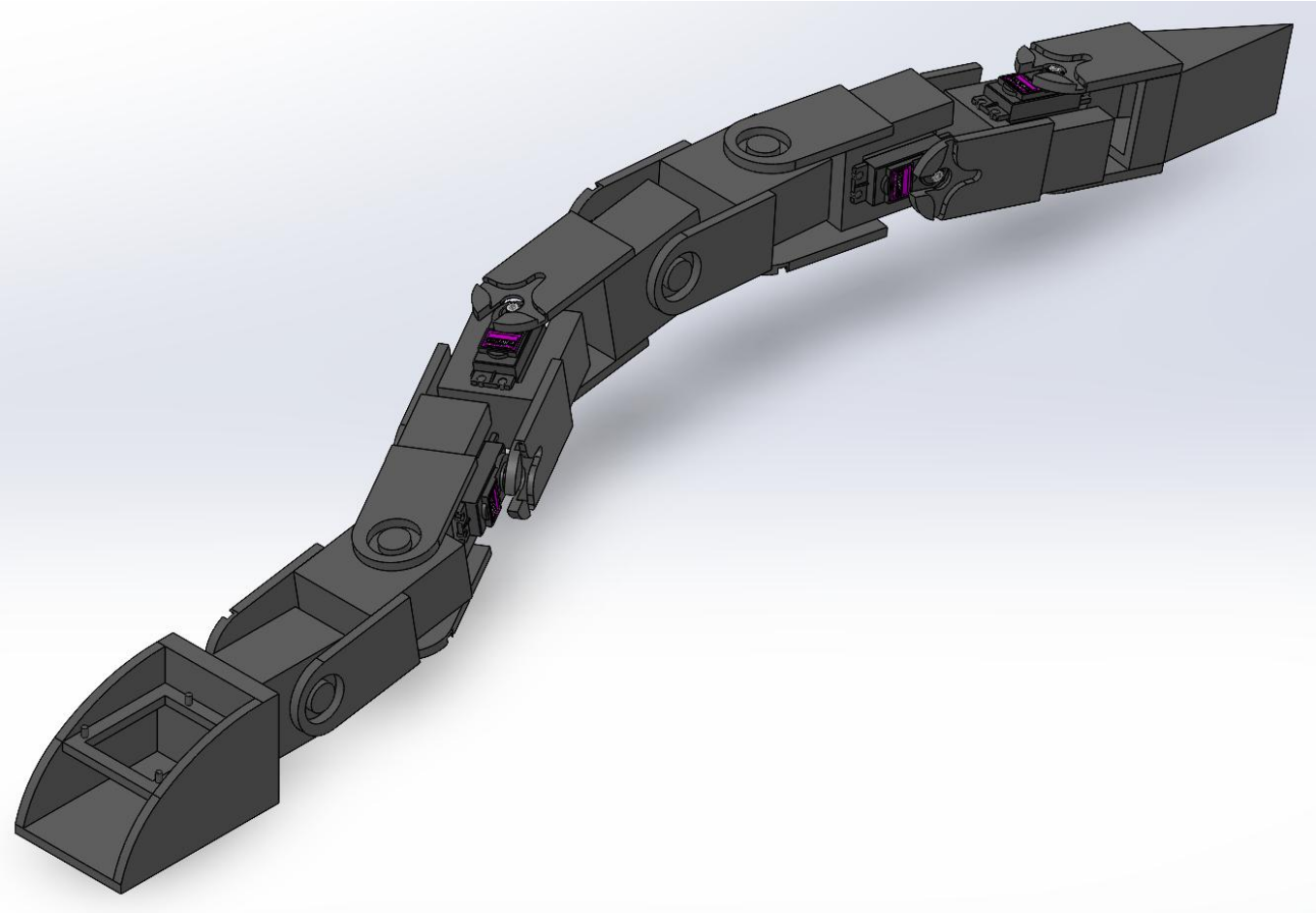
Vehicle Chassis designed for Formula Student Racing Team Orion for 2023 competitions



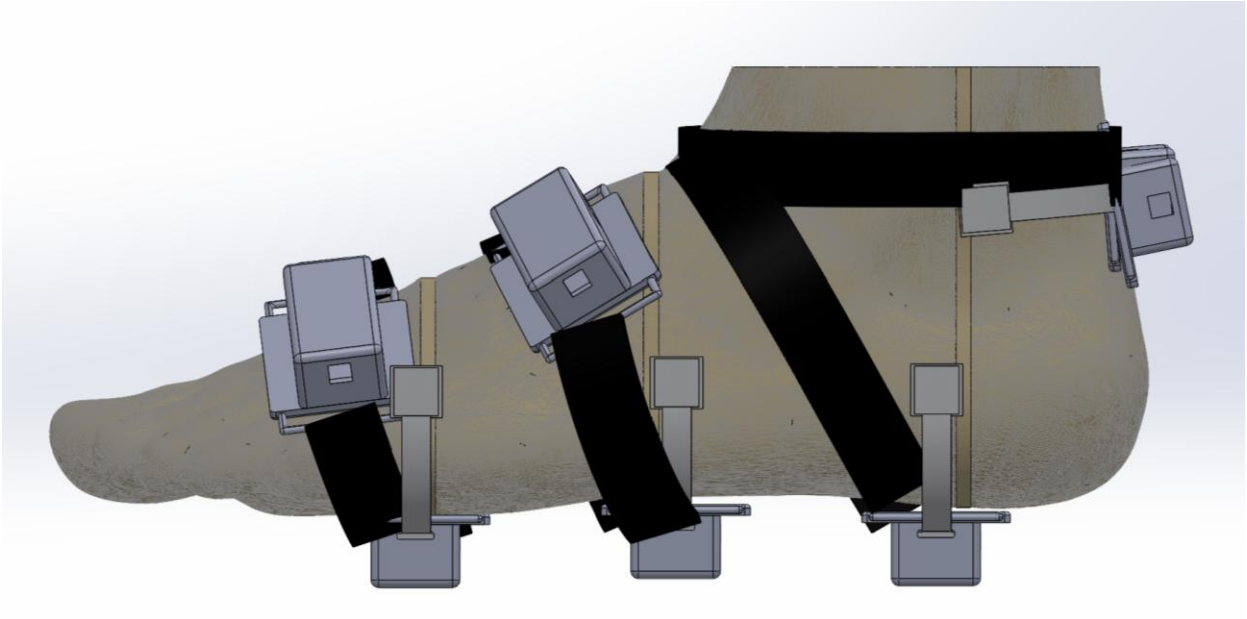
- Changes were made from the previous years vehicle chassis to reduce weight by decreasing the number of tubes but still maintaining the necessary structural points as required in the rule book to ensure structural stability.
- A central focal point was designed for the front roll hoop tubes in order to reduce weight and a square tube was added to accommodate the newly integrated antiroll bar.

Snake Robot Designed for Final Year Project 2025

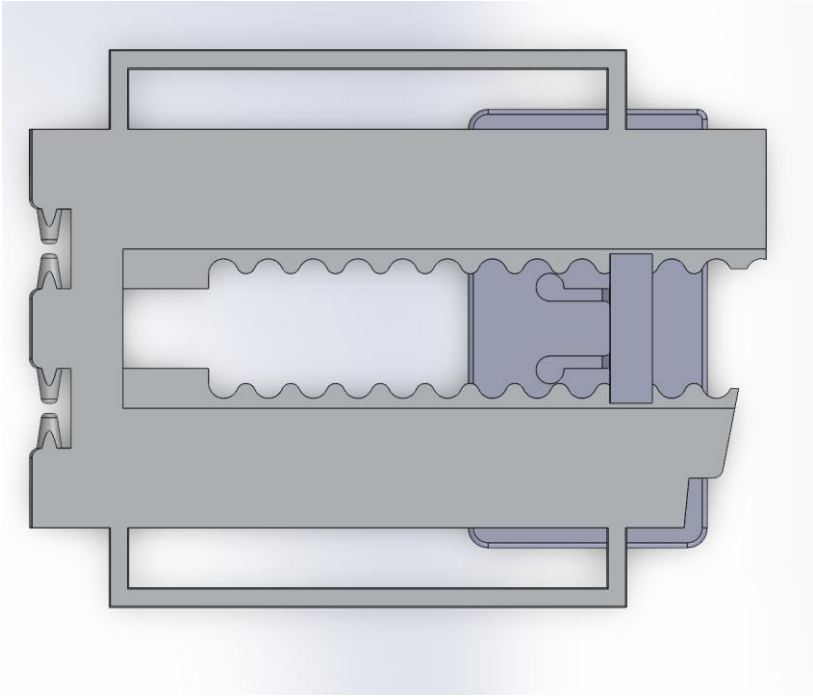


- The robot was designed to be able to crawl forward with the help of a set of rollers under the head, servo motors and ball bearings in each link and a battery and Arduino board in the head to provide stability.
- The design ensures that the axis of rotation for every link perfectly aligns up in order to ensure smooth and stable movement.

Containers and Fastening Mechanism for Diabetic Foot Sensor

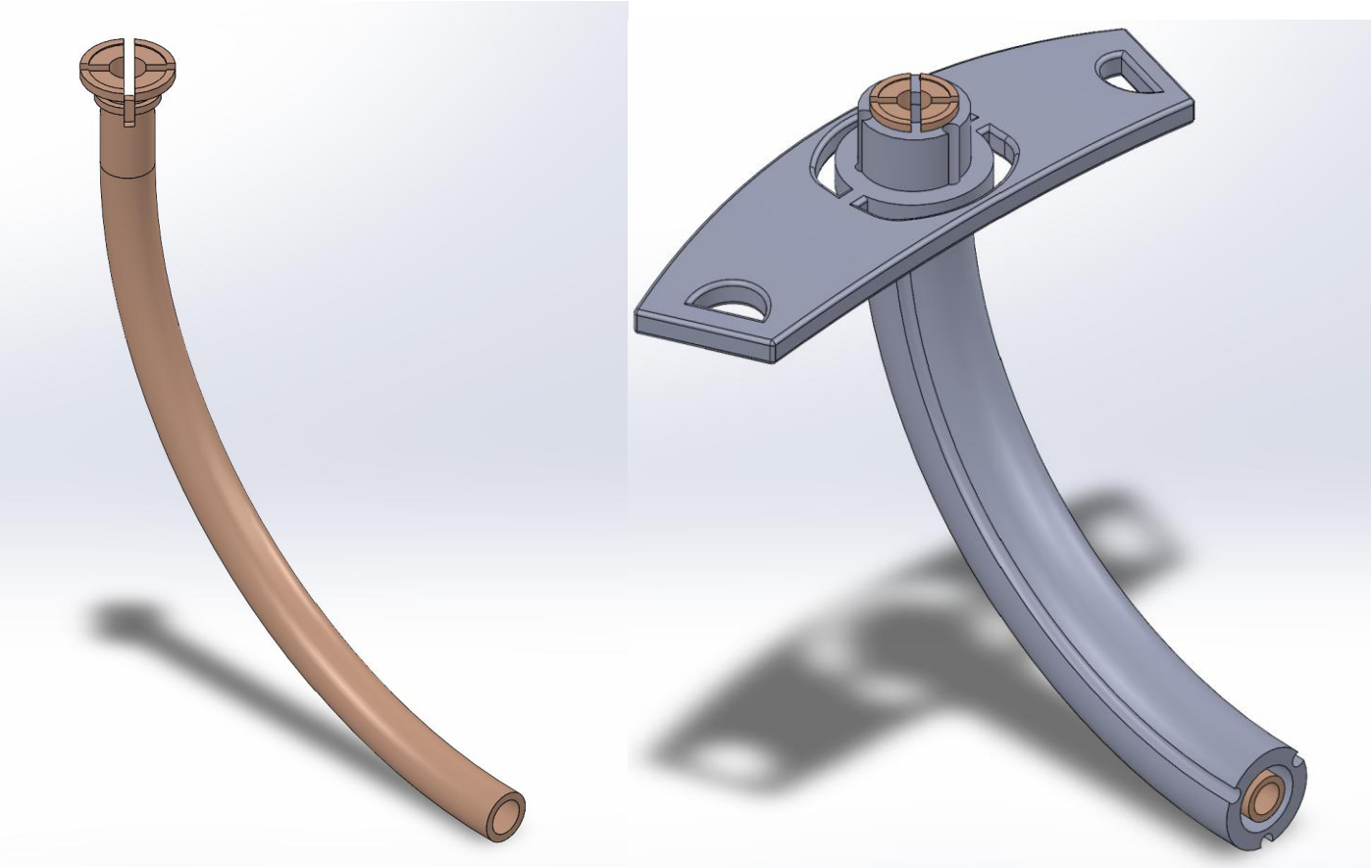


- Worked alongside doctors and fellow designers to design the container, holding mechanisms and other aspects of the Diabetic Foot Sensor mechanism. The boxes are designed to hold the sensors and electrical components and provide an outlet for the nerve sensing component.



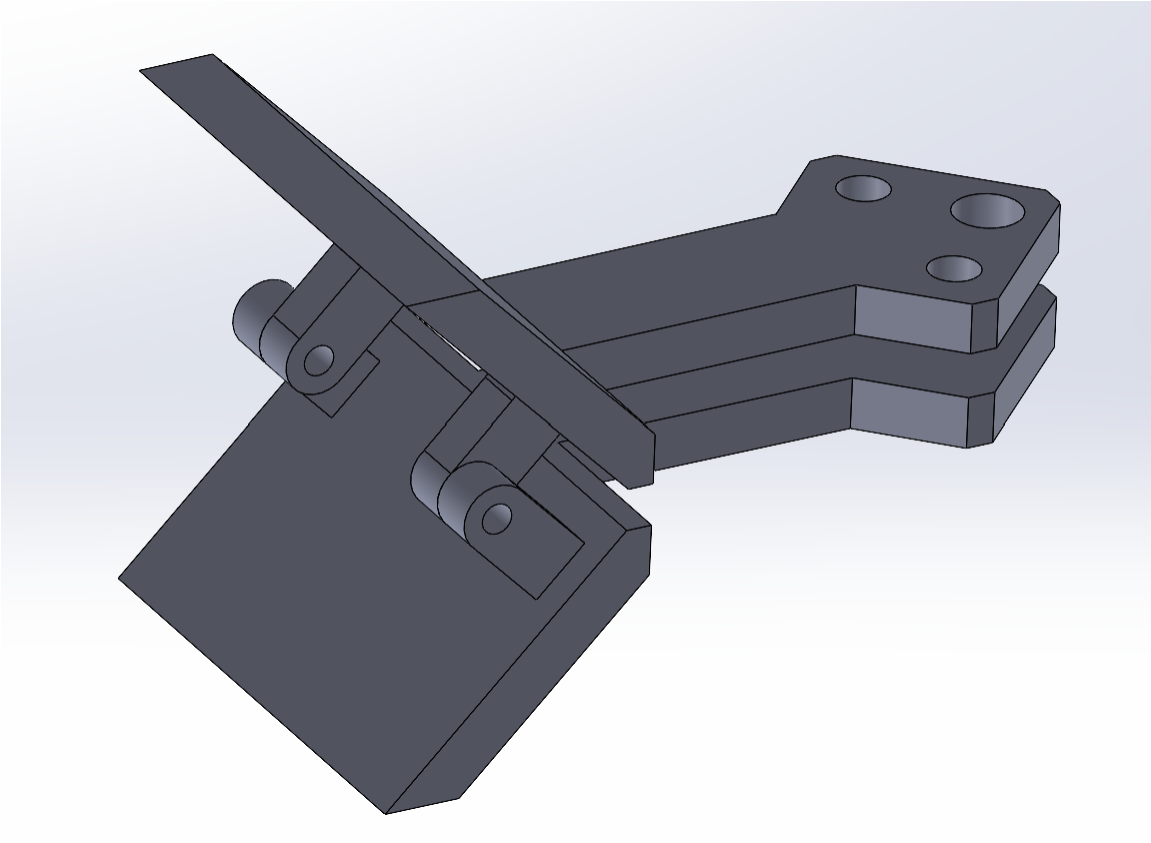
- Created a sliding mechanism to allow the box to be moved or removed from its position without needing to remove the base. The concept revolved around the bending of the two lobes locking it in place normally and allowing us to move the parts as well.

Tracheostomy Tube for Blockage Removal



- The components are designed to allow 3 small tubes placed in the grooves of the larger exterior component to be able to supply a saline solution into the patients' throat, the inner tube is designed to allow a small vacuum to pull out the saline and blockage mixture from the patients' throat and the space between tubes is present to allow the person to breathe.
- The inner tube also has a flexible locking mechanism that allows it to slide into the exterior tube. This allows us to place the larger tube into the patients' throat and then slide in the secondary tube.

Electrical Continuity Testing Part



- The part consists of two jaws that have been designed to fit a precise slot that has exposed wiring that requires a continuity check. The rear mechanism would have a spring similar to a hair clip and a rod passing through to hold it in place, farcing the jaws to remain in contact. 3 screws were fixed into the holes on the upper jaw and were soldered to wires contacted to a multimeter.
- It was not feasible to use probes every time to check continuity due to the location of the wires. This component helped reduced testing time since it could be easily clipped onto the wires. It also helped reduce wastage as previously some faulty components would accidentally pass the checks, proceed to have adapters soldered on and then fail the second check.