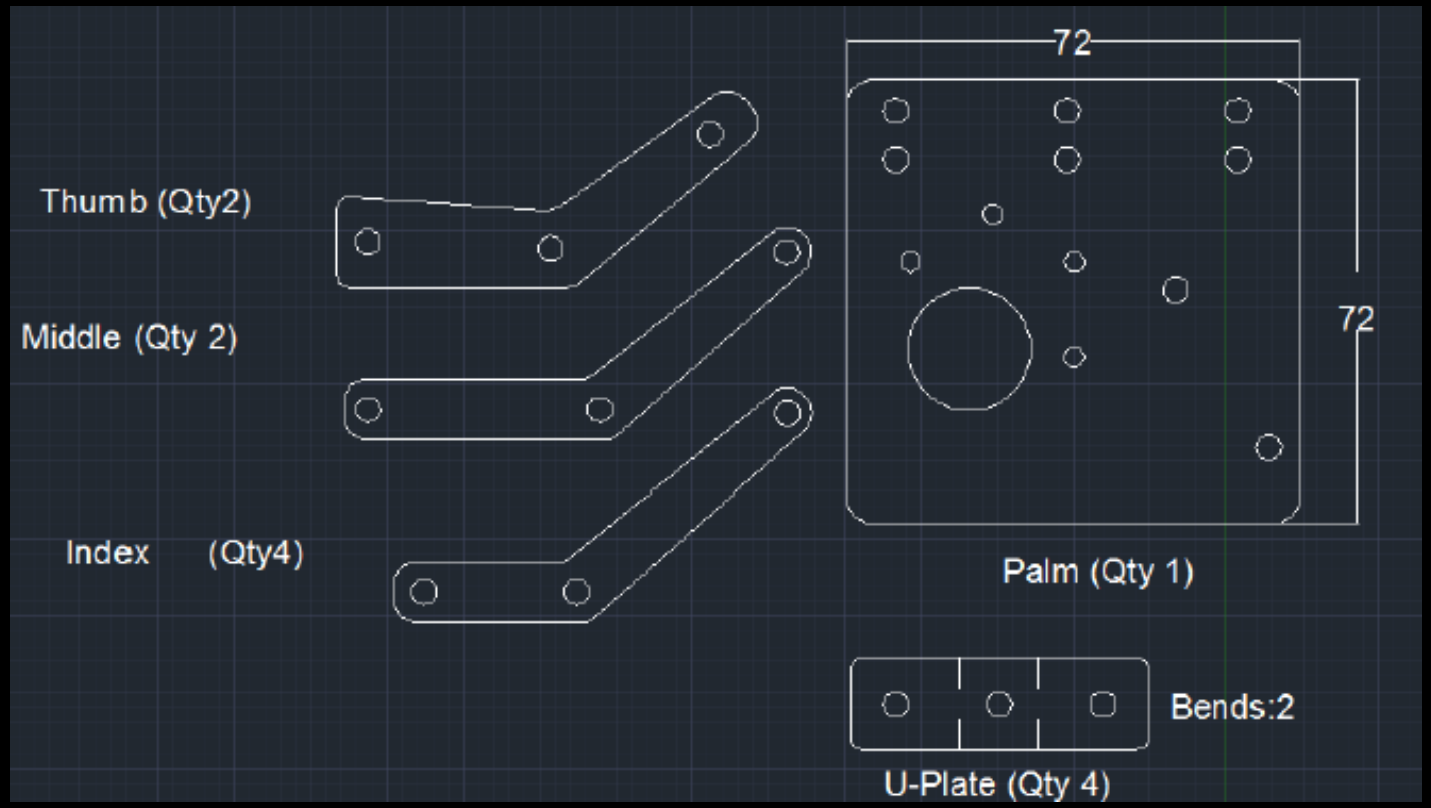
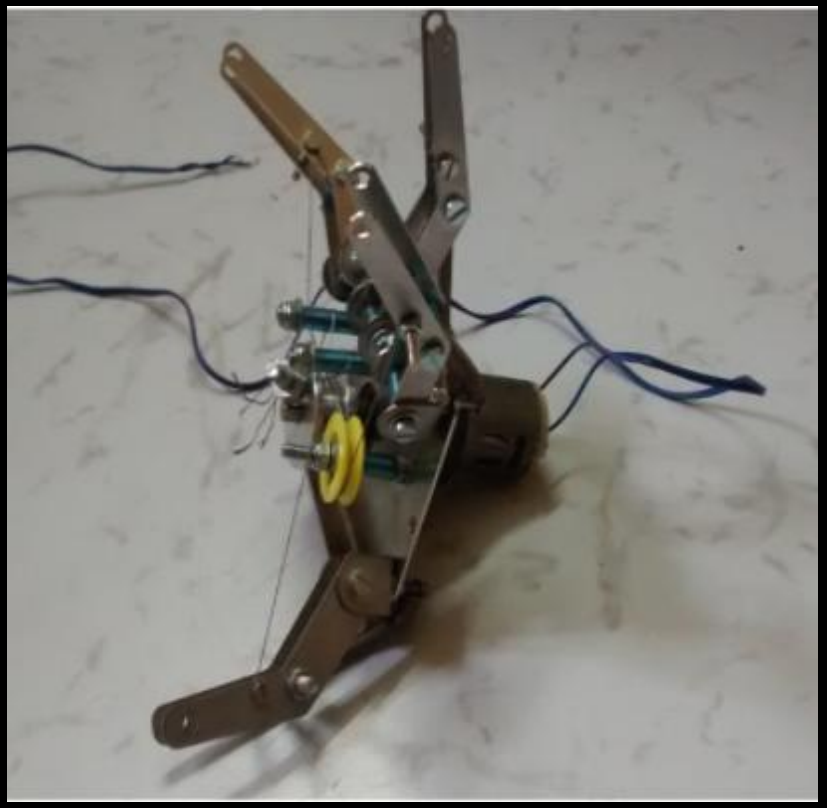
Prosthetic Hand under Myoelectric control

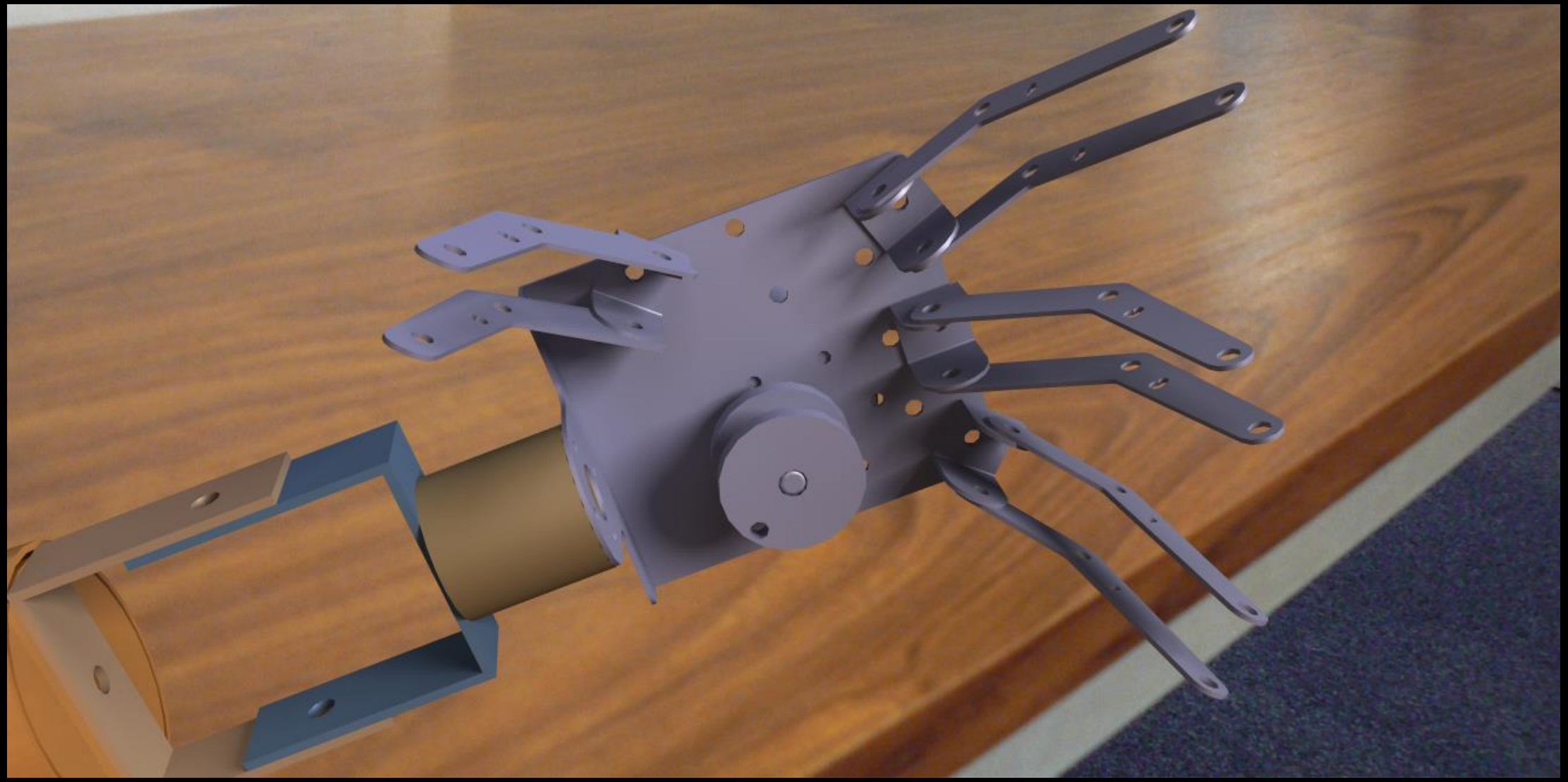
- For my senior year design (final year) project , I decided to design and manufacture an active prosthetic hand since active prosthesis are not made in India. This was in collaboration with the Artificial Limb Center, Pune.
- I built a prototype which could perform grip and release actions based on EMG signals (using surface EMG sensors).
- This project won first prize at Intel India Embedded Challenge (Smart Solutions for a Social Cause).





I used sheet metal cutting for prototyping since it was fast and easily available. The design used a simple cable mechanism. A small DC motor provided actuation and I used 1mm cables for opening and closing the gripper.

Intent was decoded using 2 myoelectric sensors which sensed a change in muscle (electric) potential in the upper arm.



Final CAD

- I participated in the Intel India Embedded Challenge with Aishwarya (an EE student from my college).
- This project was selected for display at the final round, one of 40 out of 2500 initial entries received. We also received mentorship from Arjun, an employee at Intel.
- We did a demo of our project for a jury at our display. Our project won first prize under category of “Smart Solutions for a social cause”.

Me, Arjun and Aishwarya on winning the first prize.