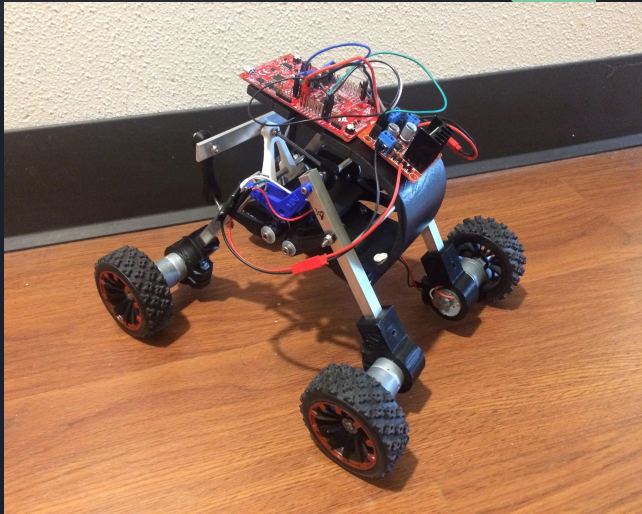
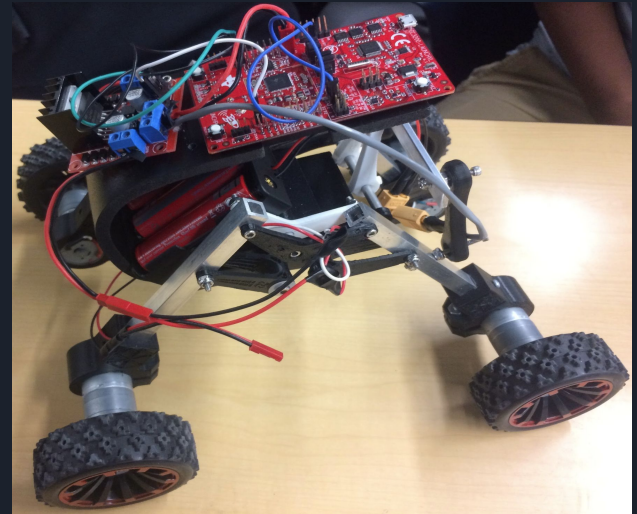


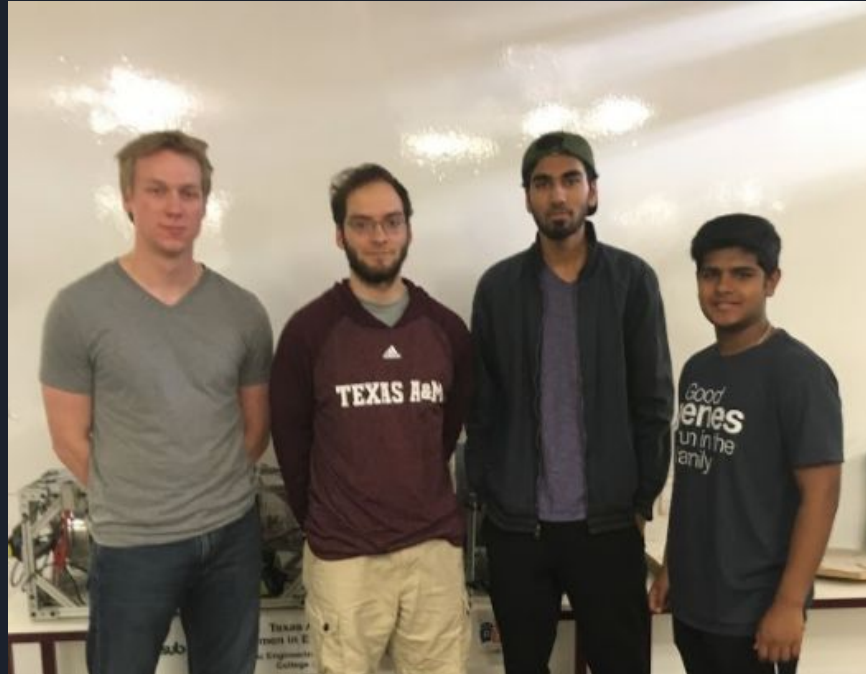
ENGR 112: DSTR ASSEMBLY



Section 509
Team 8



Team Members



Control Team - Logan McCanless (far left)
Jonathan Saenz (left middle)

Mechanical Team - Imran Shakoor (right middle)
Bibek Bhandari (far right)

Mechanical Sub-Assembly:

Drilling
holes in
legs



Fig 1: Form materials in EIC

Screwing in the
Boomerang to the frame

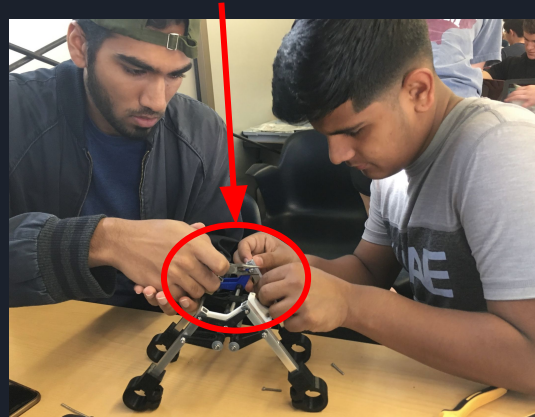


Fig 2: Assemble the frame

Pulling motor wires from
hole

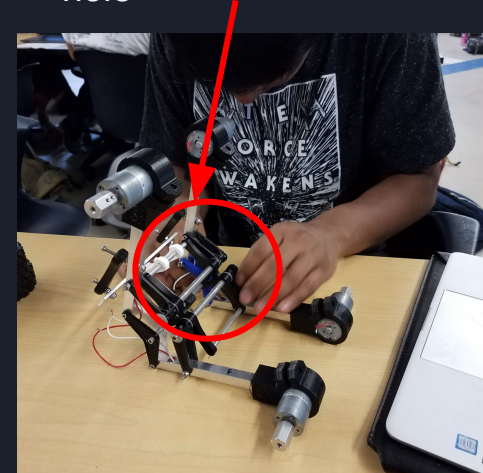


Fig 3: Run wires through legs and prepare to integrate control pieces

Mechanical lessons learned

- Learning technicals skills takes time, be patient!
- Plan before you act
- Improvising is essential
- Double check everything
- **SCREW IN THE WHEELS (with correct screws)!!!**



Fig 1: Using improper screws



Fig 2: Wheel Hub detached from motor

Control Sub-Assembly:



Fig 1: Check for polarity then solder wires together

Screwing wires into Dual H_Bridge

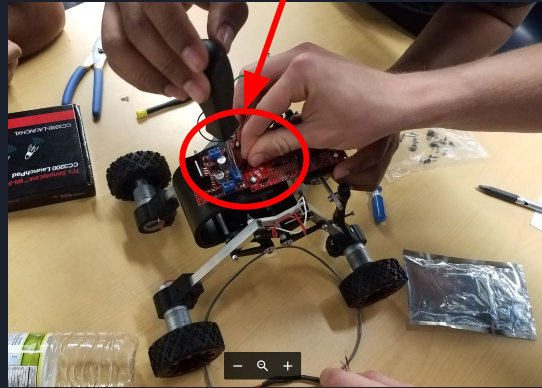
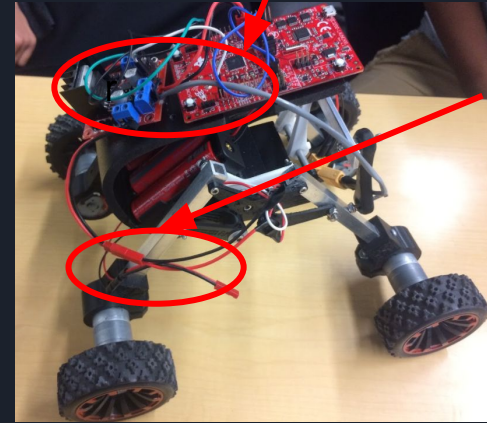


Fig 2: Assemble control pieces (H-bridge, sled, launchpad)

Using correct pin locations



Left motor connection

Fig 3: Attach wires to control pieces

Additional Modifications

Female XT60 connector



Fig 1: Two 3 cell 11.1V Lipo batteries and four 3.7V Lithium-ion batteries

XT60 series adapter

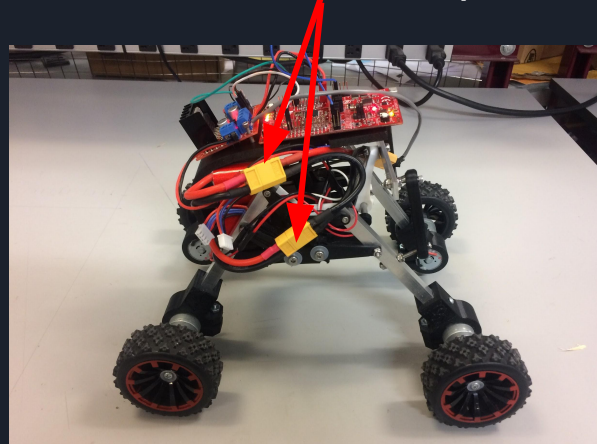


Fig 2: Lipo batteries connected in series setup

Male XT60 connector

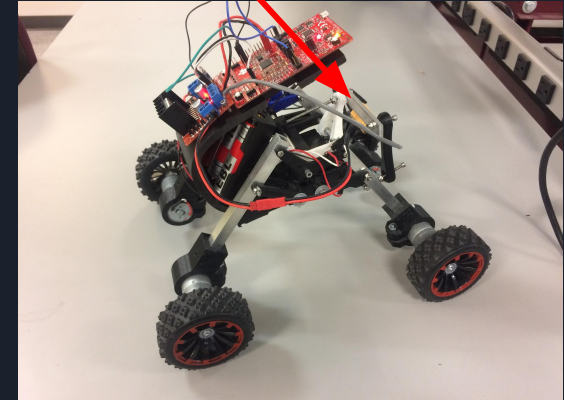


Fig 3: Four cell lithium-ion battery holder setup

Control lessons learned

- It is hard improve both the motor speed and vehicle control
- Have a backup plan during demo day
- Assembly can tedious
- Be care with two uninsulated wires

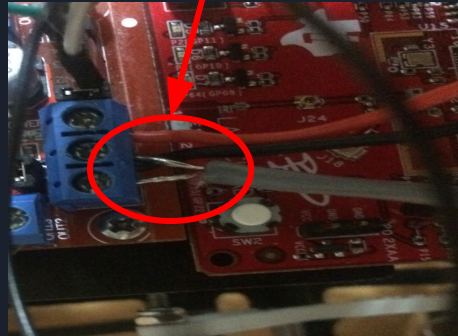


Fig 1: (+) and (-) ends from battery to Dual H-Bridge



Fig 2: Filing down sled to fit robot chassis

Conclusion

Running with 3 cell battery



- Successful integration of mechanical and control subsystems
- Robot can be controlled wirelessly by cell phone

Future improvements:

- Moving at higher speeds with better control
- Collect data wirelessly while running

Running with 6 cell battery

