

Aakarsh Saggar

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EDUCATION

The University of Texas at Austin

BS Mechanical Engineering

- Pursuing minor in Robotics.

May 2027

Austin, TX

WORK EXPERIENCE

Longhorn Racing Electric

Pedalbox Designer, Body System

September 2023 – Present

Austin, TX

- Designed and fabricated the complete pedalbox on UT Austin's 2023-2024 Formula SAE Electric racecar.
- Responsible for tangible optimizations from previous designs while working under a shortened timeframe, including ~3 lbs. of weight savings, increased redundancy, and superior electronics accessibility.
- Utilized SOLIDWORKS and Ansys FEA software to design and simulate parametric/adaptable systems.
 - Employed DFM and DFAM to allow for rapid single-machine fabrication (Waterjet and FDM).
- Fabricated frame and various components with TIG welding, FDM, manual mills, lathes, and other equipment.

National Aeronautics and Space Administration (NASA)

Robotics Intern, ER4 Branch

June 2023 – August 2023

Houston, TX

- NASA's ER4 branch is responsible for developing robotics technologies in support of human spaceflight.
- As a mechanical engineer in the Space Vehicle Mockup Facility, I worked design projects including:
 - The complete CAD design and industrial fabrication of the next-gen lunar flagpole mounting system, with potential lunar usage on the upcoming Artemis manned lunar missions.
 - Eliminated risks of regolith interference and spacesuit damage while remaining lightweight.
 - Physical assembly of robotic lunar vehicles such as SEV, LTV-GTU, and MicroChariot.
 - Development of an adjustable testbed for the VALKYRIE humanoid robot system.
- Used SOLIDWORKS, Onshape, and PTC Creo to design iterative, parametric, and robust systems.
 - Used CCF FDM manufacturing as well as manual tools like lathes, drill presses, and bandsaws.

FRC Robotics Team Vector 8177

Co-Founder, Mechanical Lead

September 2019 – May 2023

Tomball, TX

- Created and managed a high school robotics team consisting of 50+ engineering and business students.
- As mechanical lead, I developed systems and structures such as physical linkages, pneumatics assemblies, load-distribution systems, electrical control systems, and omnidirectional drivebase platforms.
 - Used Onshape, CNC Milling, FDM/FFM, shop tools, soldering, and wiring to build robots.

VOLUNTEERING

HPD Explosive Ordnance Disposal Unit

Mechanical Engineer

November 2022 - Present

Houston, TX

- Refurbished and repaired a US Air Force RC-30 robotics system for the Houston Police Department.
 - Replaced its communications equipment, serviced chassis and suspension, and reactivated camera unit.

CERTIFICATIONS & SKILLS

- **Certifications:** Certiport authorized - Autodesk Inventor, Java (IT Professional)
- **Skills:** Systems engineering; CAD; FDM/FFM manufacturing; Java; Filmography; Office; Adobe Multimedia; professional communication; engineering documentation; team management; DFM; DFAM