HIMANSHU

FULL STAKE MECHANICAL DESIGN ENGINEER

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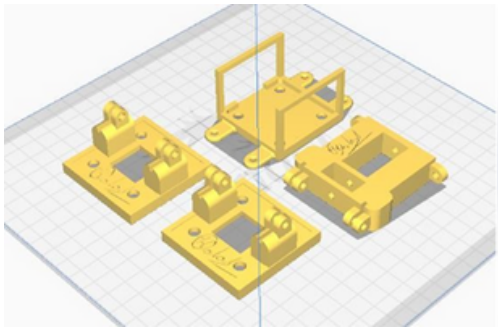
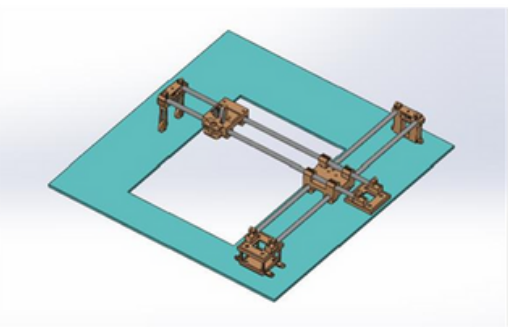
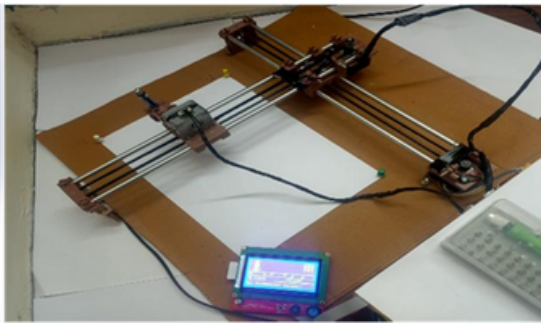
PEN PLOTTER MACHINE

What?

- Developed a Pen PlotterMachine project from inception to completion.
- Combined mechanical engineering and softwareskills to achieve precise and accurate drawing capabilities.
- Designed components and system to enable reliable and repeatable plotting.

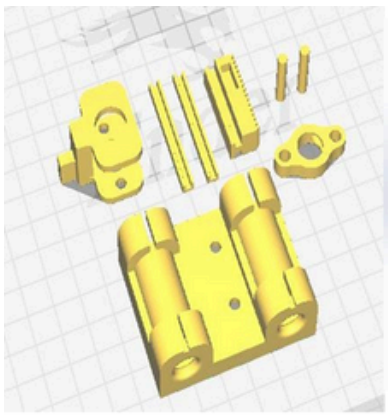
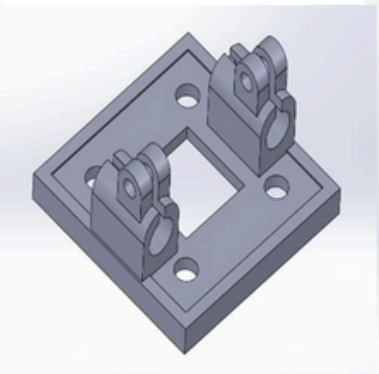
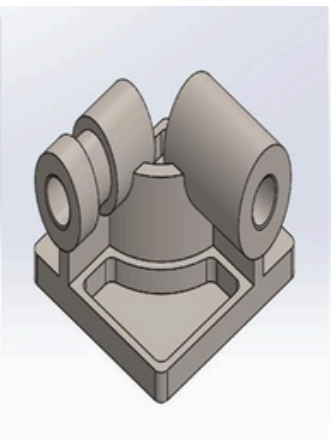
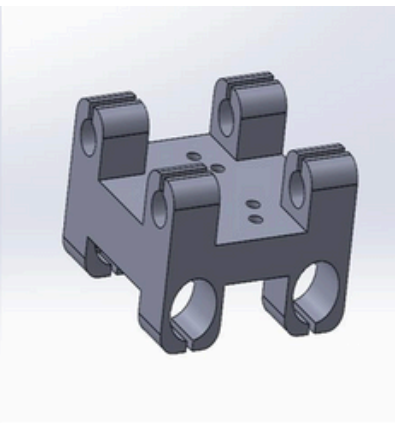
How?

- Used CAD software to create 2D and 3D modelsof all plotter components for efficient prototyping and assembly.
- Implemented an Arduino microcontroller with customized firmware to control the plotter's movements.
- Assembled mechanical and electronic components to ensure smooth operation and precision.

Results

- The plotter successfully executed precise drawings, meeting design accuracy requirements.
- Achieved reliableoperation with minimal errors, demonstrating seamless integration of hardware and software.
- Enabled fast prototyping and testing of design iterations, streamlining the overall development process.

3D Printed components for the plotter:

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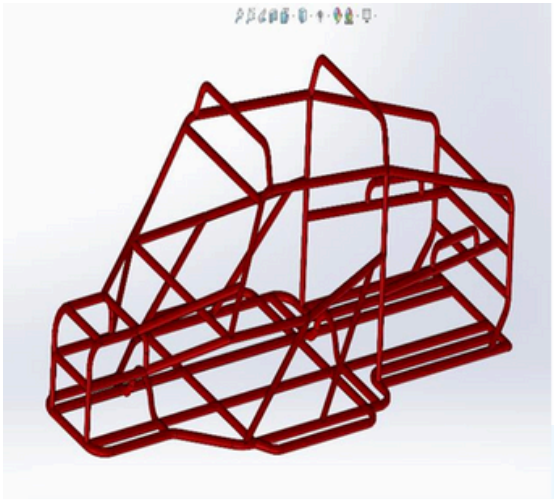
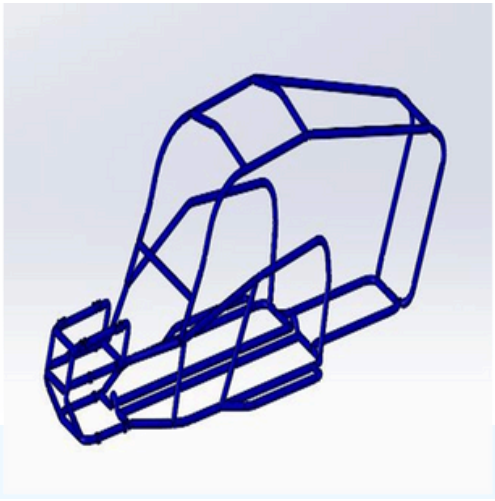
BAJA- ATV- CHASSIS





What?

- Designed and developed a BAJA ATVroll cage and chassis assembly focused on driver safety, structural rigidity, and weight optimization.
- Ensured compliance with BAJA SAE safety standards while maintaining accessibility for maintenance and driver ergonomics.
- Modeled and analyzed the frame structure to sustain impact and rollover conditions under off-road environments.

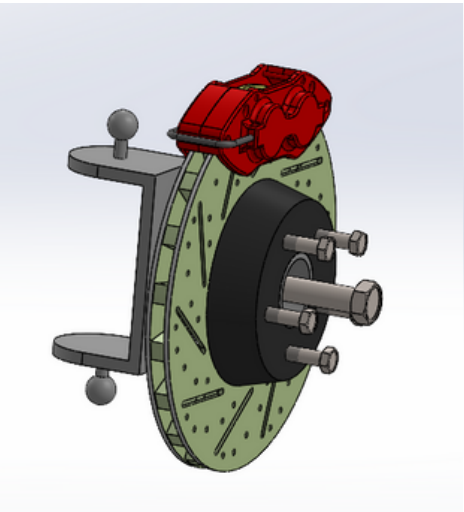
How?

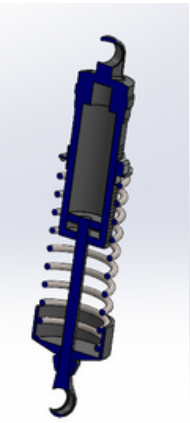
- Created the entire roll cage using SolidWorks weldment features and applied GD&T on all critical membersfor accurate fabrication.
- Conducted Finite Element Analysis (FEA) on the chassis to evaluate stress distribution and factor of safety under dynamic loads.
- Assembled major subsystems including suspension, steering,and seating in CAD for integration and interference analysis.

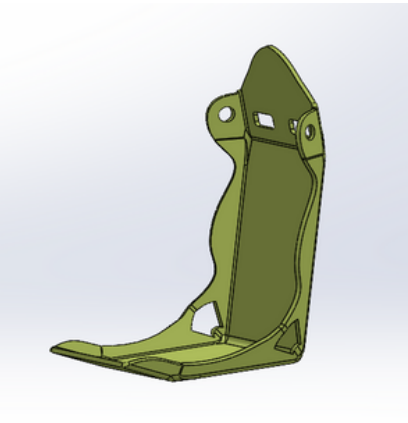
Results

- The final designachieved 30% weight reduction compared to the baseline model while maintaining structural integrity.
- The ATV roll cage successfully passed all static and dynamic load conditions during simulation and prototype testing.
- Enhanced safety and performance validated through stablehandling and occupant protection in off-road trials.

Other Parts & Sub-systems for ATV:







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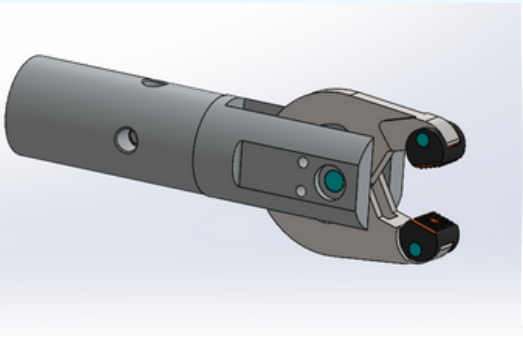
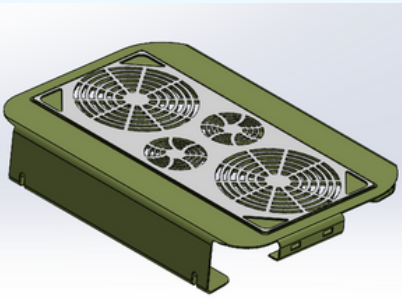
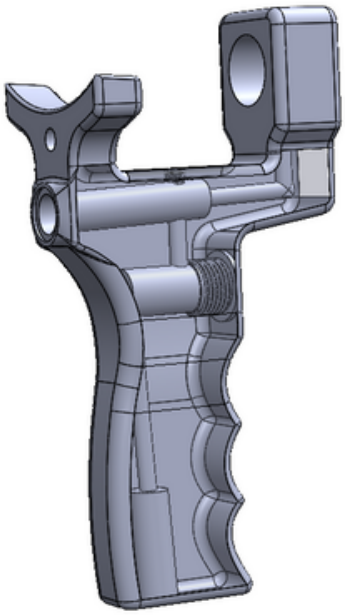
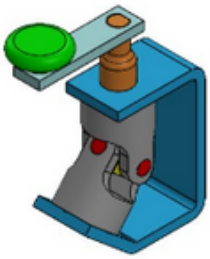
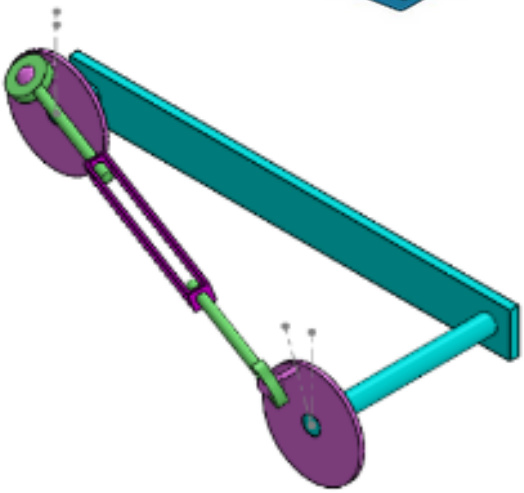
OTHER CHALLENGING PROJECTS..

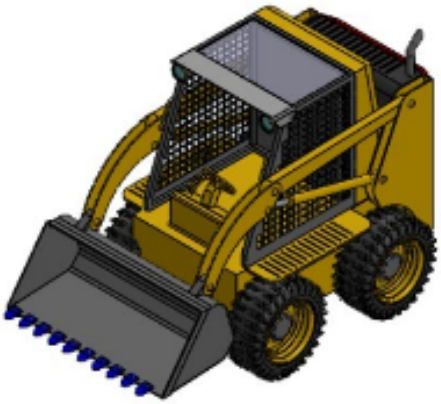


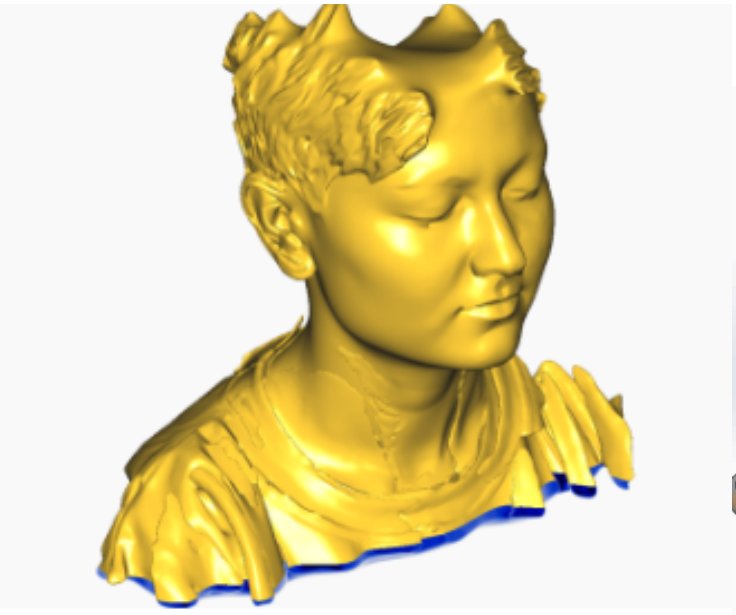


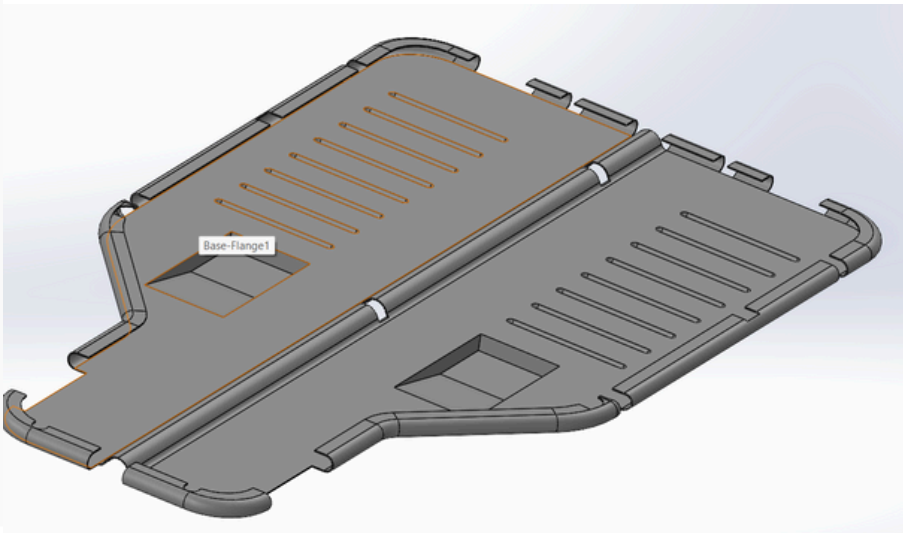












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CERTIFICATION

DASSAULT SYSTEMES

SOLIDWORKS

CERTIFICATE

Dassault Systèmes confers upon

HIMANSHU .

the certificate for

SOLIDWORKS CAD Design Associate

DASSAULT SYSTEMES
CAD DESIGN
SOLIDWORKS ASSOCIATE

April 20 2025

Academic exam at Dassault Systemes SOLIDWORKS Corp.

Manish KUMAR
SOLIDWORKS CEO
R&D Vice President

C-8FVU5YDB36