NIKHIL KUMAR

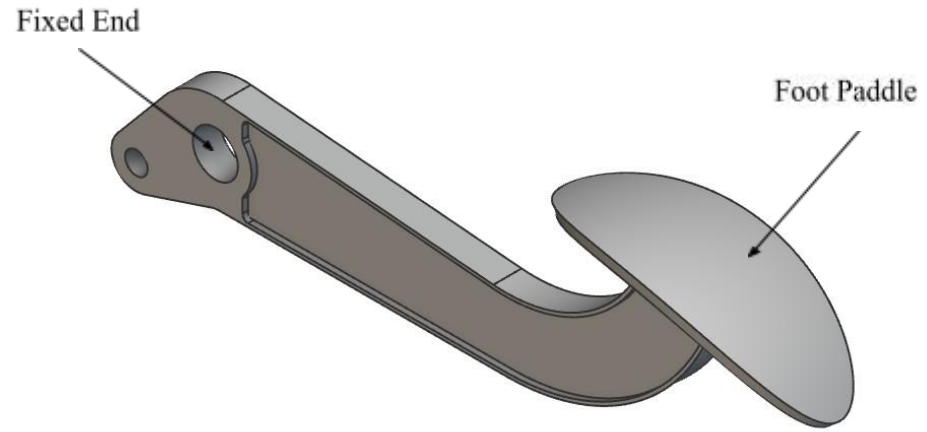
Project :

To Optimize the material usage for Brake Pedal as per the Boundary Condition and Loads provided

Use N-Topology's Topology Driven Latticing Tool to Optimize the material usage for Brake Pedal as per the Boundary Condition and Loads provided below.

- The Foot Pedal has a Static force of -200 N acting in -ve Z
- The Fixed End displacement is Completely Constrained.

Compare the change in Stress, Displacement and weight reduction potential in all the cases.



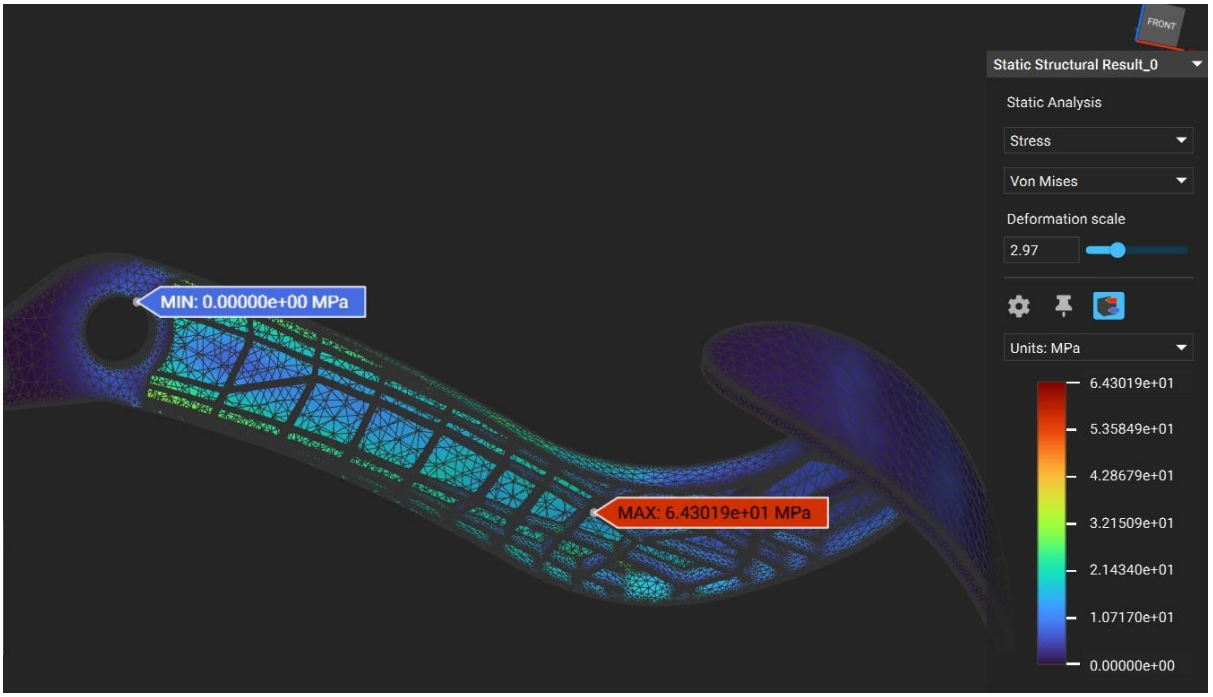
After Optimization with NTopology:

Ribbing Type	Max Stress (Mpa)	Max Displacement (mm)	% Weight Reduction
Optimized Simple Cubic	6.430e+01	2.490e+01	33.0491
Optimized BCC	9.795e+01	1.832e+01	29.2004
Optimized FCC	6.441e+01	1.483e+01	22.4831

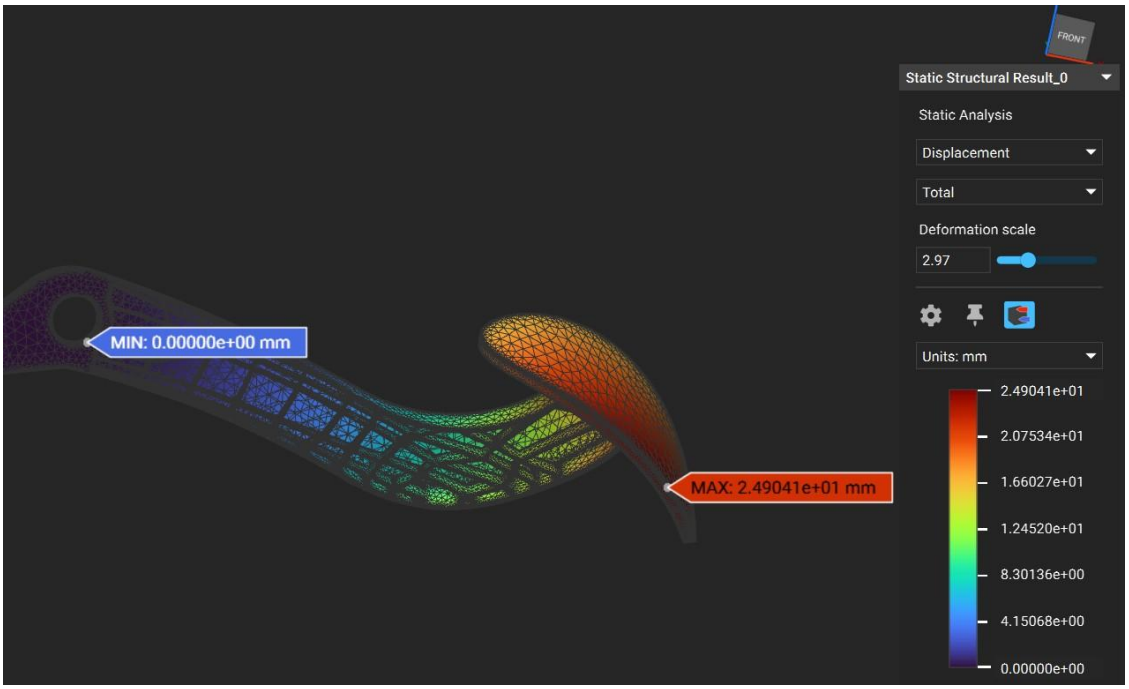
Screenshots of Optimized Lattice Parts :

Optimized Simple Cubic

for stress -

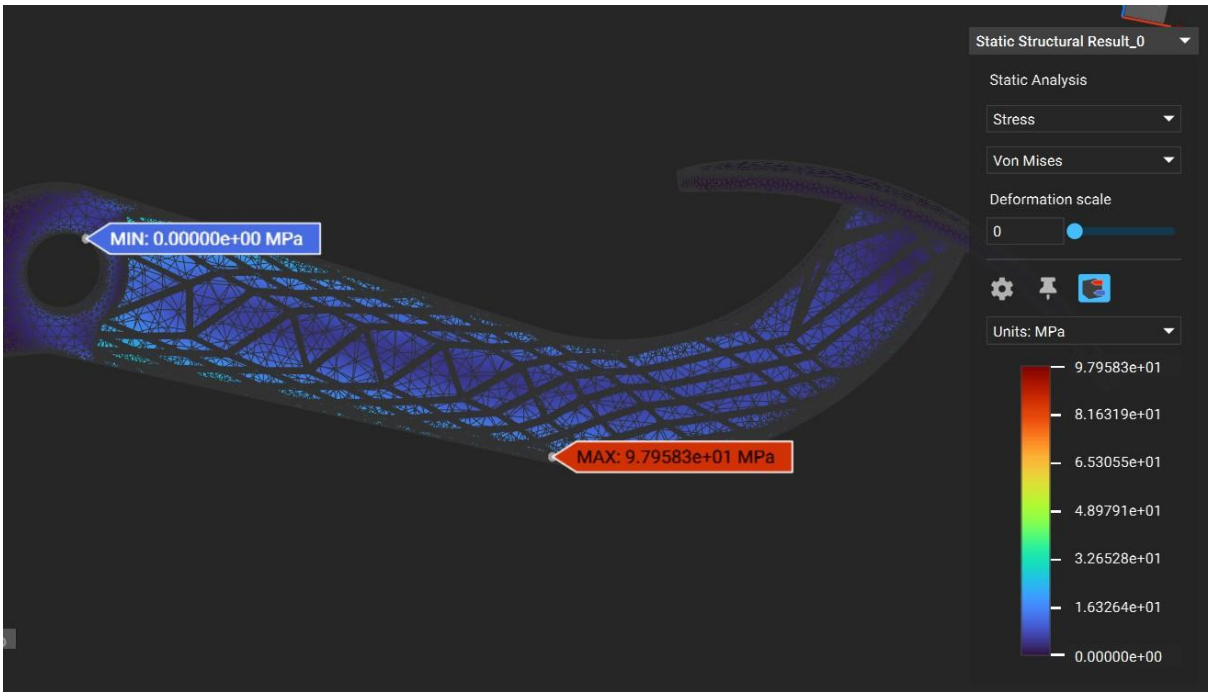


for displacement -

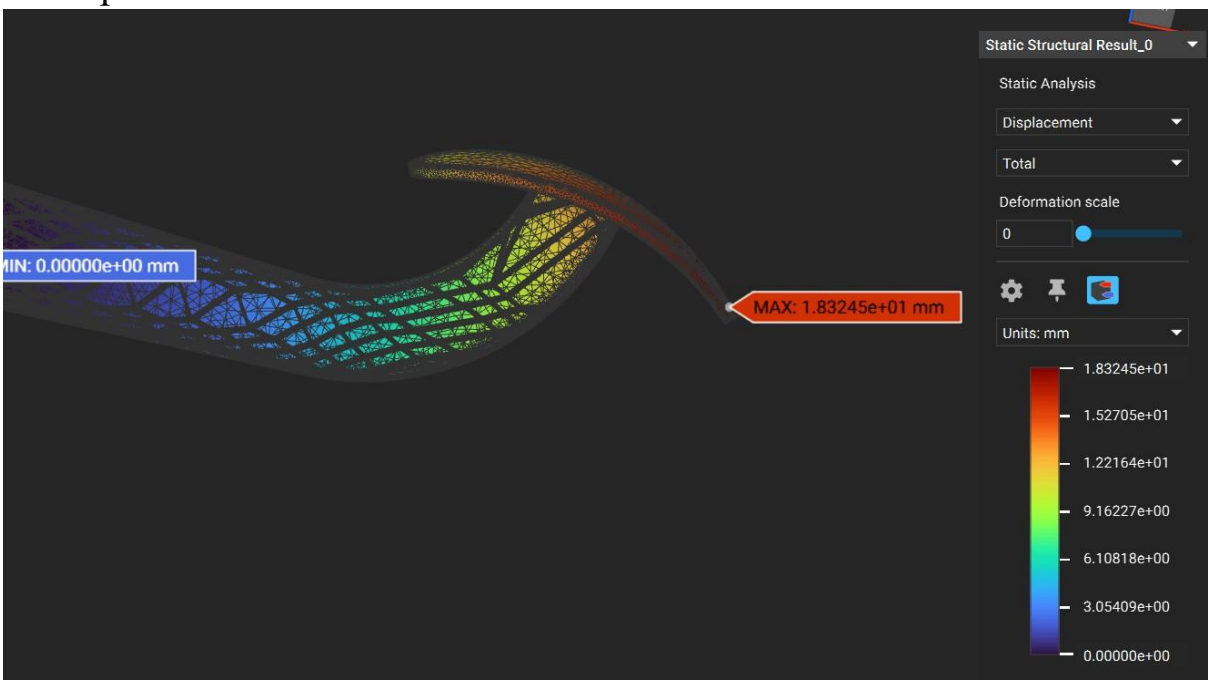


Optimized BCC

for stress -

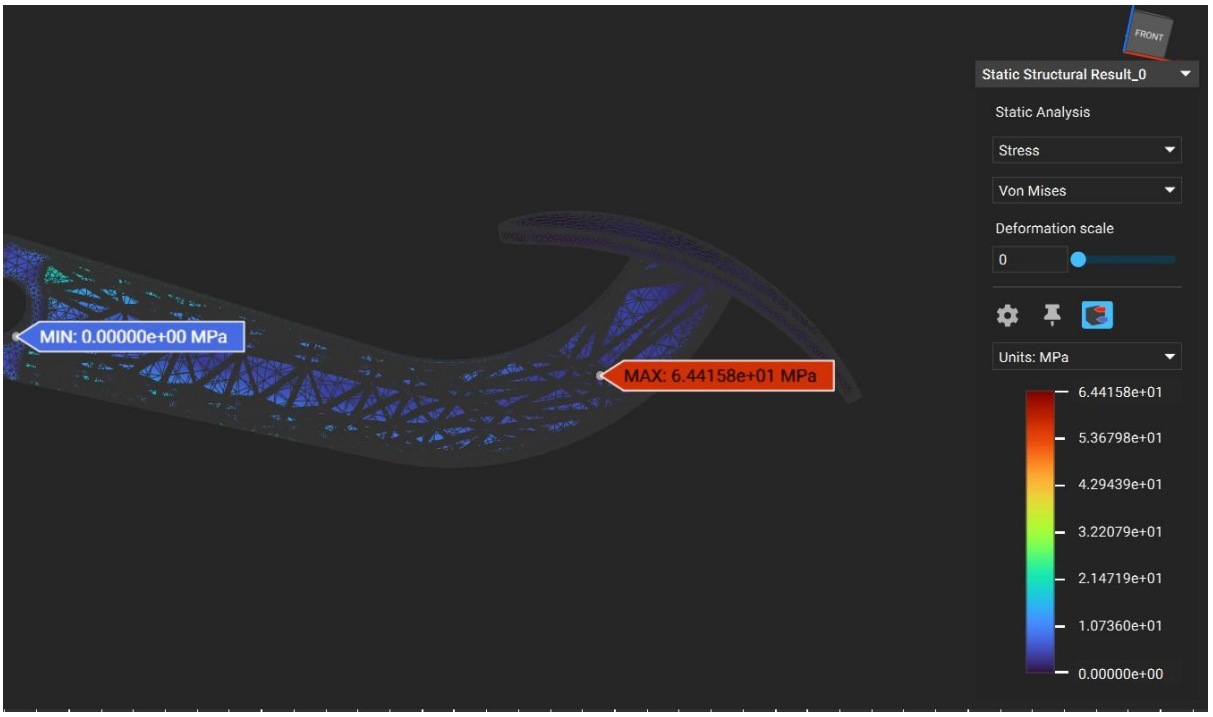


for displacement -



Optimized FCC

for stress -



for displacement -