



Summary

The objective was to research and develop a carbon fiber cargo-rack suitable for daily commuting. This product will eventually be brought to market under Celilo Cycles.

Proof of Concept



The initial mold defined shapes and dimensions. The surface finish was pivotal for future creation.



Carbon Fiber Bicycle Cargo-Rack

Team Members: Khalifa Al-Marri, Huy Ly, Jingkai Peng, Linus Ruckman

Technical Advisor: Dr. Sarah Oman

Sponsor: Scott Campbell



Manufacturing

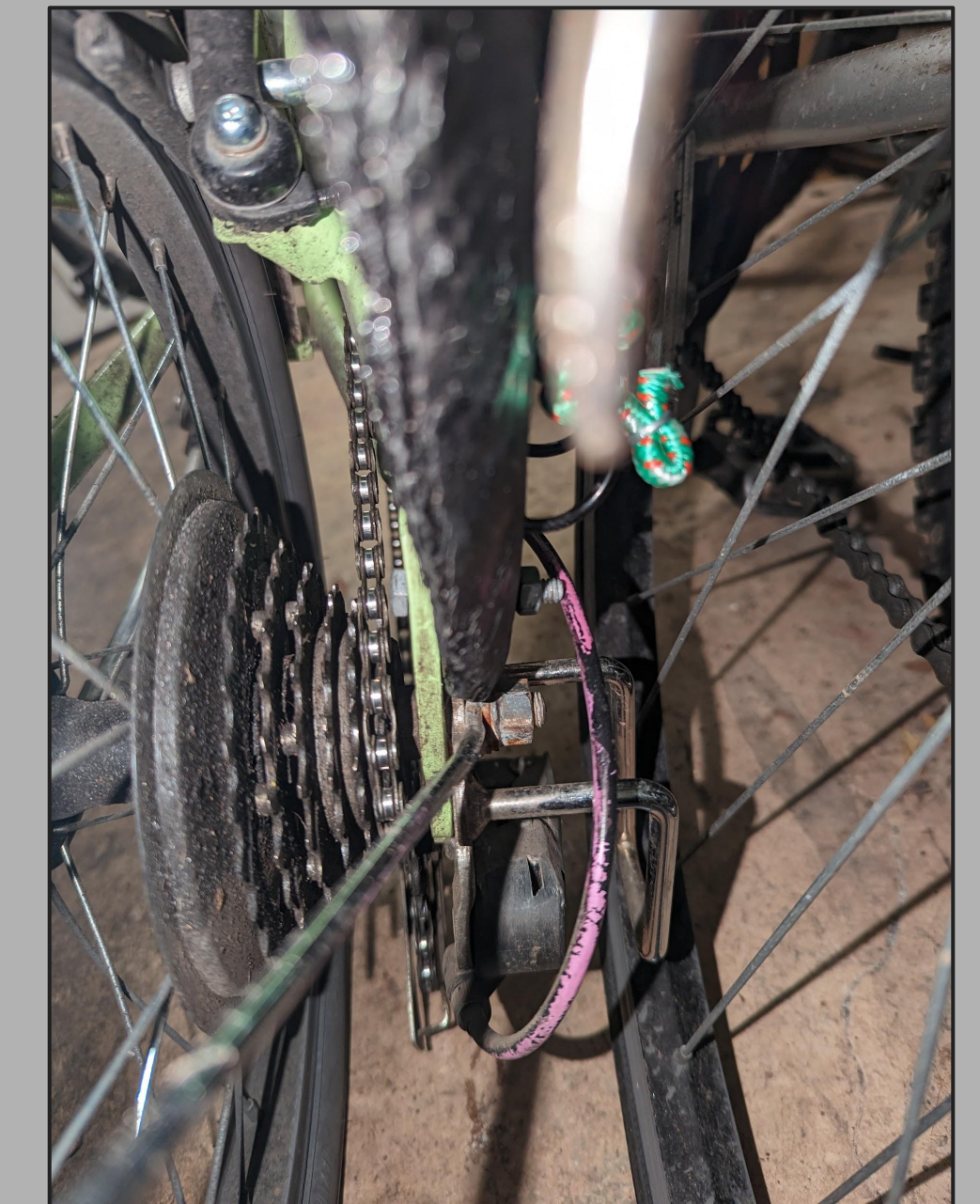


A template was created using the male mold, allowing tolerance for curvatures.



The fabric was cut post-wetting to minimize fraying.

Test Results



The rear-axle mounting was secure and did not obstruct the gears or wheel.



The weight capacity proved adequate, but cargo-bracing capabilities were subpar.

Future Recommendations

- Machine molds for precise measurements and shapes.
- Incorporate additional mounting methods.
- Create a template with excess seam allowance.
- Incorporate cargo-carrying features into the lay-up procedure.
- Long-term ride testing is required.