



ZERO CARBS

Electric Motorcycle Prototype

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Problem Statement

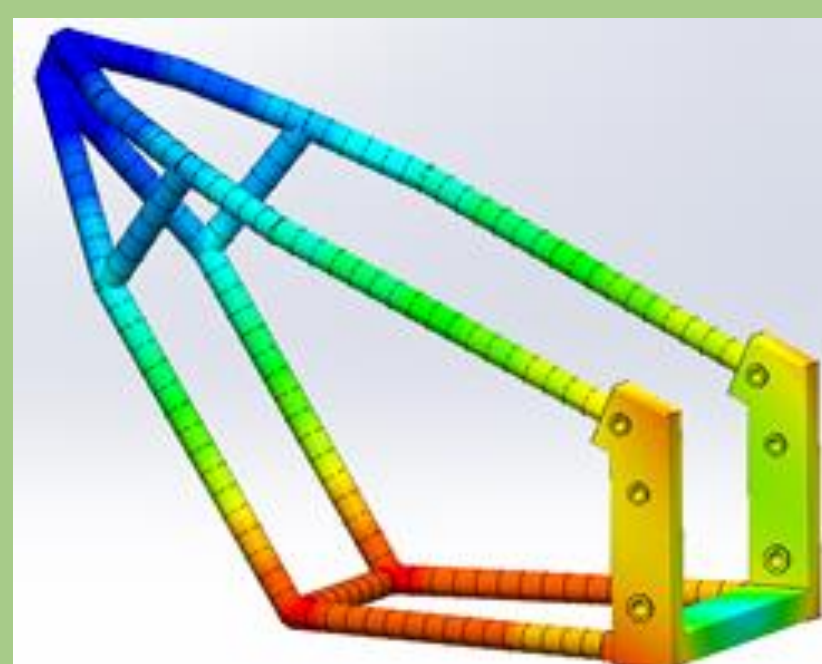
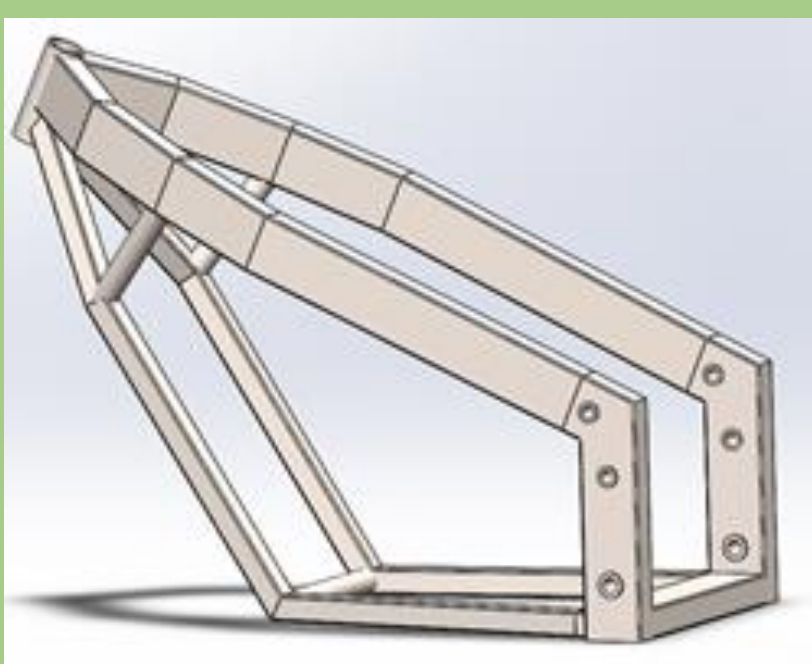
Humanity faces an important challenge in the coming age to provide environmentally-friendly transportation for the global population

*Save the environment.
Ride with style.
Prototype Juan.*



Goals

- Offer a product with **more efficient** use of energy than combustion-engine peers of similar performance
- Develop a vehicle with:
 - **No direct emissions**
 - Top speed of **at least 60 mph**
 - Highway range of **at least 30 miles**
- Research the geometry specifications of a motorcycle frame for proper dynamics
- Research the details of electric drivetrain and compare current technologies

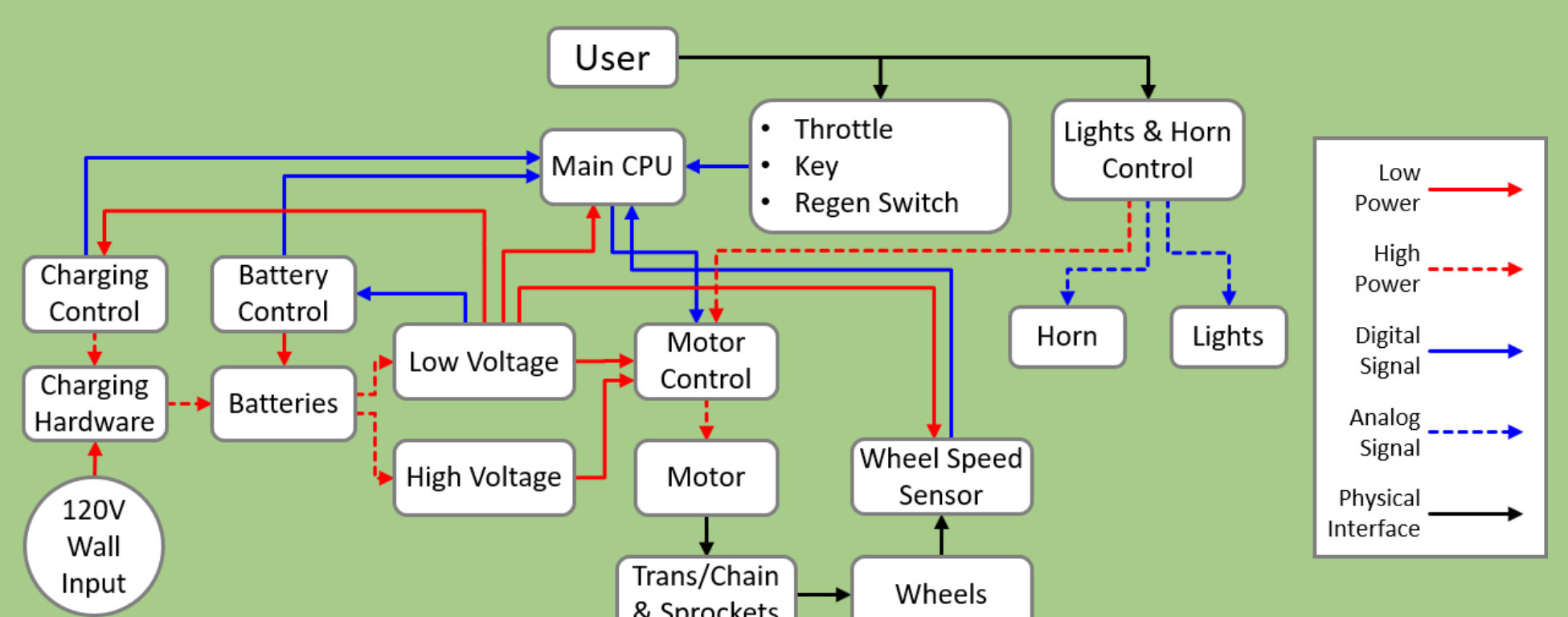


Mechanical Design

The mechanical team generated and fabricated a design which met our geometry goals and was guaranteed by finite element analysis to withstand expected loading impact scenarios

Electrical Design

The electrical team developed a high-power system to power required equipment, along with a redesigned motor controller, for street-legal operation



Technical

- Batteries: 12 Nissan Leaf modules. Pack total 62Ah at 91V. Peak output: 540A, 49kW
- Motor: Motenergy ME1115 Brushless DC (BLDC). Output: 12kW continuous, 30kW peak (~40HP), 60 ft-lb peak torque
- Estimate HW range: 30 miles
- Estimated top speed: 80+ mph