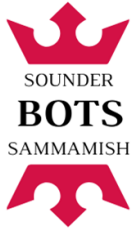


Sounder Bots

Robotics Team



Team Sounder Bots

- Based in Sammamish WA
- 6 Team Members
 - 3 in Middle school
 - 3 in Elementary School
- Interested in robotics and STEM



Like many great innovators, we also started in a garage...



First Lego League (FLL)

- Robotics competition organized by Lego
- Fun way to introduce & encourage STEM
- Competition parts:
 - Core values
 - Robot design
 - Robot missions
 - Innovation project
- 2021 theme - Cargo Connect



Innovation Project

- Goal: solve a real world problem related to cargo
- Learned about Shipping and Supply Chains
- Visited the Port of Tacoma for research
- Thanks Leslie for tour and information!
- Inspired our project - Autonomous Straddle Carriers



2021 Innovation Award



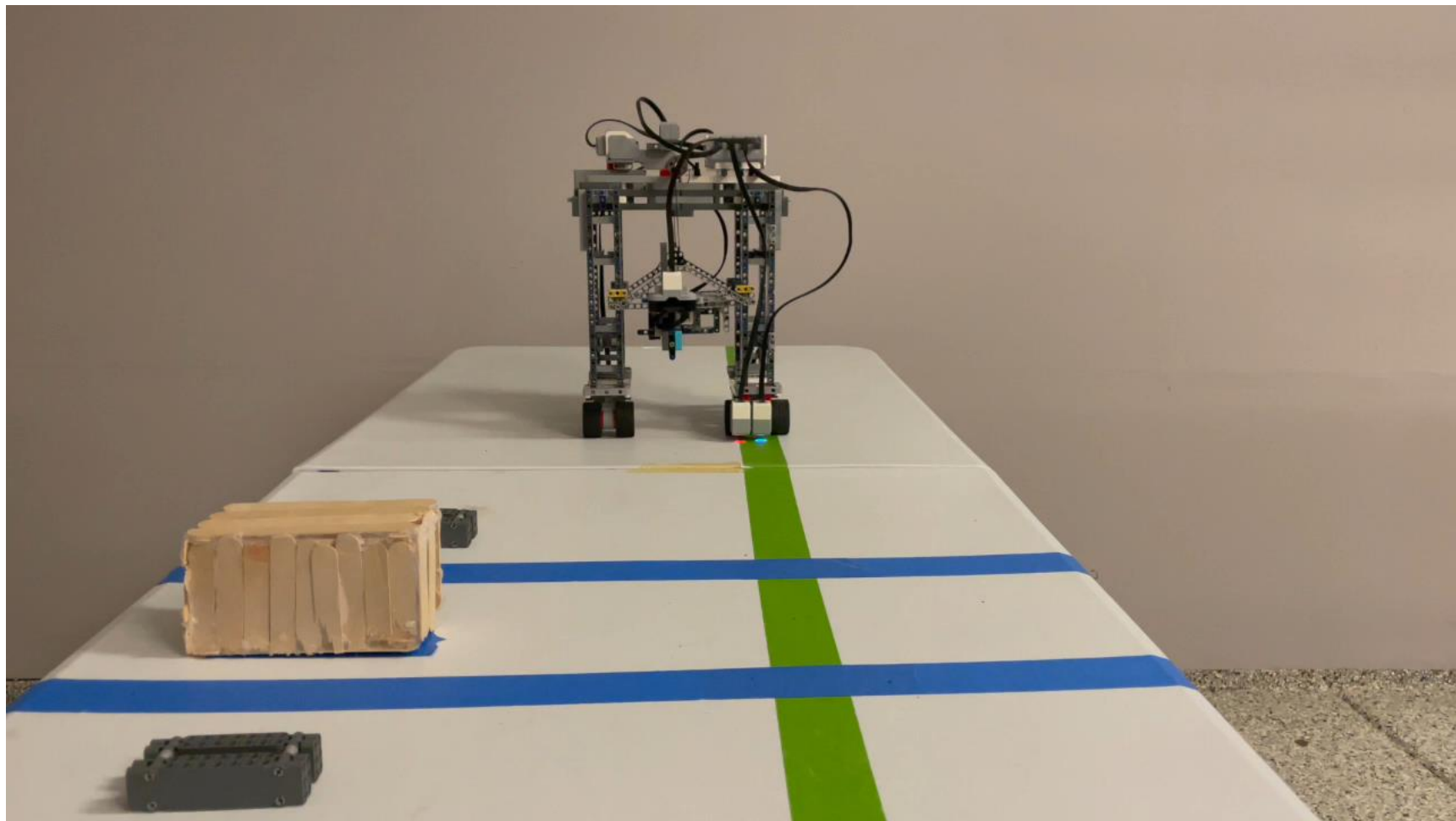
Our Innovation Project goals

- Help reduce port congestion
 - Be environmentally friendly
 - Promote port employee well being
-
- Learn about Cargo and Robotics
 - Have fun!

Our solution - Autonomous Straddle Carriers

- Automate container transport within the port
- Uses color sensors and grid markers to navigate
- Uses ultrasonic sensors to detect containers
- Motors to pick up and stack containers
- Use solar panels and batteries for power
- Build & coded using Lego Mindstorms platform





Benefits

- Improves safety and efficiency
- Can work 24/7
- Uses inexpensive sensors and technology
- Uses sustainable energy
- Promotes jobs of the future - solar, batteries, technology, etc.

Reflections

- Learned how the port works
 - How packages come to our house – no magic involved!
 - End to End Process for Supply Chain
 - Global Supply Chain
 - How port are critical to the global supply chain
 - STEM
 - Coding
 - Design
 - Problem Solving
 - Solution Iteration – Design Evolution
 - Core values
 - Collaboration
 - Team Work
 - Persistence
-
- Confident in approaching problems and solutions
 - Had a lot of fun!!
 - Involving all our friends – who will join FLL this year

Thank you for...

- Inspiring us!
- Community outreach
- Allowing us to present here

- Leslie for the tour and answering our questions

Questions