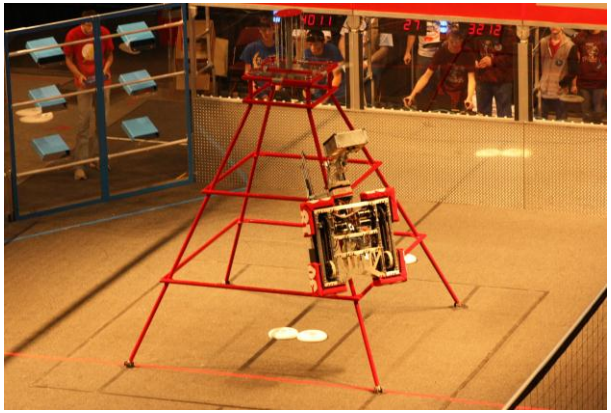
Strategy

In Autonomous we dump three frisbees in the bottom goal.

In teleop we collect four colored frisbees from the feeder station. We then climb the pyramid and dump the frisbees in the pyramid goal. The maximum number of points we can earn is 56.



Nordic Storm successfully climbing in a practice match at Lake Superior

Recognition

2012 Lake Superior Regional Winners
2012 10,000 Lakes Regional Quality Design Award
2012 10,000 Lakes Regional Safety Award
2012 10,000 Lakes Regional First Seed
2012 FRC Championship participants
2013 Lake Superior Regional Chairman's Award submitter
2013 Lake Superior Regional Excellence in Engineering Award
2013 Lake Superior FIRST Dean's List Finalist
2013 Lake Superior Woodie Flowers Finalist Award
2013 10,000 Lakes Regional Engineering Inspiration Award
2013 FRC Championship participants

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www.nordicstorm.org

The Robot

"Rototoskr"

2013 Excellence in Engineering Award
2013 Engineering Inspiration Award

Nordic Storm

The Robot

Programming

Our programming team wrote its own Autonomous Scripting Language (ASL). This mini-language we have written has made the process of writing and testing our autonomous code much easier and shorter. The ASL allows us to change our autonomous code with a couple of keystrokes. Instead of changing the actual code, we just change a string of numbers and letters that our robot turns into a command and runs in autonomous. Now, the total time between test runs is about 5 seconds, allowing us to change the autonomous code at any point up to seconds before a match starts.

Climber

Inspired by the sewing machine's walking foot, we designed our climber to advance in small increments rather than from rung to rung. The current climber is driven by a simple pulley system and ball screw, and features one mechanically linked pair of spring-loaded teeth tensioned with strands of surgical tubing rather than the two independently driven sets present in our previous version. At the bottom of the climber we designed the "Pac-Man" to accomplish the dual purpose of preventing the robot from sliding off the pole and rolling over the corner as we climb. At the top, our positive engagement system prevents our robot from falling backward off the pyramid, and slides smoothly out of the way when passing into a new level.

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Dumper

Our original dumper consisted of a box that sat at the top of our climber and would dump the Frisbees at the top of the pyramid after climbing to the top. After some climber improvements and rethinking we changed our dumper design. The current dumper, now more robust, is mounted on the chassis and moved by the climber actuation. This new design allows for our robot to dump Frisbees in autonomous along with improving our ability to dump at the top of the pyramid.