Electromagnetic Wall Climber, Year 2

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In year two of building the electromagnetic wall climber the goal of building a robot capable of climbing steel structures remained the same. This year the project’s focus is on improving the robot’s climbing and inspection capabilities. This is to replace the conventional means of power plant inspections which consist of scaffolding that cost over $200,000. The wall climber is capable of doing things other forms of inspection using drones and humans can't, which is getting accurate data at an affordable and cheaper price. The climber consist of 4 legs each made of 4 servos, 2 leg brackets, and one electromagnet, as well as a customly designed body. The climbers legs have been shortened to improve climbing efficiency. Some other parts are a programmable interface, wireless camera, a camera mount, several circuits to power and control the robot, and multiple individually designed 3D printed parts that make up the body of the robot. A new addition of an aluminum skeleton has been added to accommodate for any significant stress put on the machine. Although, last years climber failed at climbing at any significant angle due to a lack of programming and several of the robots components not being strong or durable enough. Through the modification and replacement of these parts this year's improvements made it successful at climbing vertically for about two feet before reprogramming was needed. Further testing will be done in the future to improve performance.

Awards Won: