Parker Link

Non-Binary Data Storage

Challenge: Innovation
Category: Intermediate
Region: Calgary Youth
City: Cochrane, AB
School: Cochrane High School

Abstract: Since the beginning of computers, data has been stored in binary. However, this project developed a prototype, that reads and writes in a non-binary format, using electrical discharge machining to write to different depths on a metal platter, and capacitive sensing/interferometry to read these depths (and convert back to digital data), demonstrating that such a system could help shape the future of digital data storage.

Biography

I, Parker Link, am a grade nine student attending Cochrane High School in rural Alberta. I have always been interested in engineering, mathematics and physics. When I was nine, I learned my first programming language, Python. Since then, I've learned to program in more than ten languages, and have developed many, many programs. In my spare time, I enjoy building prototypes in our workshop. When I was 12, I got an Arduino (microcontroller board); this drastically increased the complexity of engineering projects I undertook. I strongly recommend an Arduino to anyone interested in computer science/electrical engineering. In September, I explored building a quantum computer, but after some research, it was clear that such a project was infeasible. After exploring similar ideas, a non-binary, digital storage was chosen. Since dyes used in CD-RW discs weren't readily available to experiment with optical disc storage, my ideas morphed into my current project. In my free time, I enjoy playing basketball, chess, and the piano. For last year's science fair, I developed a system that transmits audio via a laser beam to test signal degradation caused by weather conditions. After high school, I plan on going into electronic systems or computer engineering.