Brian Singer

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Education

Jul 15 - Aug 15

MIT Launch
MIT Sloan School of Management

MIT Launch is a month long entrepreneurship program. At MIT Launch I learned to create a business by actually creating a business. Over one month our group conducted market research, built a fully functional website and presented our company to investors. Our live demonstration allowed expert programmers to help users program for a fee. The website allowed real-time collaborative code editing, video chat, file transfer and screen sharing. A video demo is available here: https://www.youtube.com/watch?v=zExhdG9Ibzs.

Volunteer Service

Apr 15 - Present

Co-Founder
Byram Hills High School
Helping Hands Club
Grades 11,12
4 Hours/Week
Total Hours: 40

The helping hands club 3D prints and builds prosthetic hands for children across the world. The club is one of only 20 organizations approved by E-nable to print prosthetic hands. More information can be found at http://enablingthefuture.org.

Extracurricular Activities

Sep 12 - Present

Science Research
Grades 10,11,12
7 Hrs/Week
Total Hours: 300

I created two novel devices that identify and treat bruxism. Bruxism is a disorder in which a patient excessively grinds or clenches their teeth. Bruxism symptoms include tooth wear, headaches, back pain, and neck pain. The current available bruxism detection and symptom alleviation devices are intrusive. My first device is EEG-based and collects data from a single electrode. The device uses a machine learning algorithm to detect bruxism from the EEG data. The second device uses Eulerian Video Magnification to amplify the jaw movement in a video recording (or live video feed) for bruxism detection. Both techniques appear to be novel approaches for the detection of bruxism. I compared both devices to a commercial bruxism detection device to gauge effectiveness and obtain qualitative user feedback. Both of my devices demonstrated improved efficacy compared to the commercial bruxism detection device. A demonstration of the EVM technique is available here: https://www.youtube.com/watch?v=KE1HP9SwFDo.

Sep 13 - Present

Tech Club President
Grades 10,11,12
4 Hrs/Week
Total Hours: 120

I am the president of Tech Club. Every week I mentor students through their programming projects. The club is split into the following groups: web development, app development, game development, and hardware development. Twice a week I help the groups with their programming issues, give each group feedback and assign goals to accomplish for the following week. The club also competes in programming competitions. We competed in several online HSCTF competitions. Last year we also

competed in the Cornell programming competition. My team tied for first place with Dalton high school.

Apr 15 - Present

Process Watch
Grades 11,12
10 Hrs/Week
Total Hours: 120

A local IT company's CEO contacted me and expressed his frustration for manually tracking backups and replications. He expressed that he was unable to find acceptable commercial solutions that could handle the thousands of emails generated by the servers he maintains. For this reason I created the website Process Watch (www.process.watch). Process Watch automatically monitors backups and replications. Current backup systems send emails to the IT manager notifying them the status of the backup. Process Watch parses emails and automatically keeps track of each individual machine. I am currently working with the IT CEO to expand the user base of Process Watch. We currently have eight companies beta testing the website and we parse over 50,000 emails a month. I expect to partner with the IT professional to deploy the service as a commercial product around the new year.

Awards/Certificates

Jan 15

MIT THINK Scholars Finalist
Grade 11

I was 1 of the 6 MIT THINK Scholars finalists chosen for my science research project (out of over 100 applicants).

Jun 14

Science Research Outstanding Sophomore
Grade 11

Given to only one sophomore science research student for their work in science research.

Skills/Academic Achievement

Programming
Skill Level: Advanced

I have been programming since 9th grade. I am proficient in the following languages: MATLAB, C++, Java, HTML, CSS and Javascript (node.js).

Leadership

I participated on a 30-day Nation Outdoor Leadership School (NOLS) trip. Over the course of 30 days I learned to navigate and lead groups.