Eric Sun

sunericr@gmail.com | (860) 287-0707 | sunericr.github.io

EDUCATION

BS Mechanical Engineering — **Boston University**, *Boston, MA* — *(2017)*
Magna Cum Laude

MS Mechanical Engineering — **Northeastern University**, *Boston, MA* — *(2020)*
Engineering Leadership Certificate

SKILLS

General: Project management, Cross-functional team leadership, Relationship Cultivation
Mechanical: DFSS, SolidWorks, PTC Creo, GibbsCAM, NC/CNC Mill, Lathe, Sheet Metal Operations, Laser Cutter, 3D printing
Software: Python, C++, Matlab, LabView, Minitab, Crystal Ball, Microsoft Office, HTML, CSS, JavaScript
Electronics: Altium, Soldering, Arduino, Logic Design

EMPLOYMENT AND LEADERSHIP EXPERIENCE

Becton, Dickinson, & Co, *Andover, MA* – **Mechanical Engineer** (Current) (*2018 – Current*)

- Prototyped novel medical devices on the Advanced Technology development team in the Diabetes Care business unit
- Utilized programs such as SolidWorks, and Altium to develop working electromechanical prototypes
- Performed Monte-Carlo simulations for tolerance stack-up analysis of infusion pump fluid path dimensions
- Analyzed markets and costumer needs to assess novel IP within the realm of diabetes technology
- Wrote test protocols under ISO 13845, designed test fixtures, then ran tests within the scope of Design Controls CFR 820.30
- Created scripts to control stepper motors and linear actuators that drove novel infusion pump prototypes (See MEMS Needle Project)
- Programming web scraping tool in Python to analyze IP data and generate reports

PV Pure, *Somerville, MA* – **Mechanical Engineer** (*2017*)

- Took on multidisciplinary role in small clean energy startup environment with two other engineers
- Engineered mechanical architecture of solar-powered water filtration assembly for use in remote areas
- Negotiated with suppliers and shippers for discounts to meet cost constraints
- Drafted proposals and infrastructure guidelines for clients
- Optimized design for manufacture using Lean Manufacturing principles

Engineering Product Innovation Center, *Boston, MA* – **Production Advisor** (*2016 – 2017*)

- Instructed students in machining, product development, and design for manufacturing
- Used GibbsCAM to produce G-Code for the Fanuc CNC Mills
- Trained with Drill Press, Laser cutter, NC/CNC Mill, Band Saw, Soldering Iron, Lathe, and 3D Printers

Boston University, *Boston, MA* – **Drone Research Assistant** (*2016 – 2017*)

- Developed a Dynamics Lab Exercise using drones to better demonstrate Newton's Third Law
- Used a Linux environment to control a drone and collect onboard sensor data
- Developed a thrust sensor for using concepts from instrumentation and mechanical measurements

Boston University, *Boston, MA* – **ANDESITE Satellite Research Assistant** (*2016*)

- Compiled tumbling simulation data using MATLAB
- Aided in the programming of the satellite using both Python and the Arduino IDE
- Machined components of the satellite using Drill press and NC/CNC Mill

Boy Scouts of America – **Eagle Scout Rank** (*2008 – 2014*)

- Participated in 100+ hours of community service
- Coordinated camping trips and expeditions
- Led Eagle Scout project restoring tennis courts for the Town of Mansfield

PROJECTS

MEMS Needle-Actuated Insulin Pumping Mechanism Platform

- Designed and developed a MEMS pumping mechanism leveraging BD's world-class needle technology
- Planned a product platform using commonality of design for general infusion at different viscosities and different infusion rates
- Arranged engineering efforts to design, manufacture, and test pumping mechanism
- Programmed stepper motors to test pumping mechanism's dose accuracy and torque requirements (Stroke Volume: 0.32µL | Torque: 7mNm)
- Ran cost analysis on tooling and manufacturing line investment for manufacturing of final pump solution.

Molecular Cloning Kit

- Designing a Molecular cloning kit aimed at accelerating the process of molecular cloning using existing technologies
- Developing an apparatus to deploy an electromagnetic field that will attract Biotin magnetic beads
- Writing grant proposals and technical documents outlining specific functions of kit

Anheuser-Busch Bulk Movement System

- Led a team of 4 in designing a tannic acid movement system to relieve operator of heavy lifting
- Coordinated meetings with Anheuser-Busch upper management and team
- Machined and assembled a scale mockup of system to demonstrate use to operators
- Used SolidWorks to create computer model as well as preform Finite Element Analysis on structure