

RF, communications, signal processing, and analog electronics are very interesting to me and I'm taking extra classes to learn as much as I can. I've been lucky to have four great summer internships since high school. I work hard on my tasks and strive to understand the underlying concepts and the bigger picture.

## Electrical Engineering, Cal Poly SLO - 3.72 GPA

2018 - Present

- Graduate 2024, Masters in EE, RF emphasis, Minors in Mathematics and CS.
- Engineering electives thru 2022: Advanced analog electronics, Analog Filters, High frequency amplifier design, Digital comms (2x), extra upper-div E&M (2x), extra CS (3x), extra math (4x)

## RF Electronics Intern – Raytheon NextGen RF Technology Design Team Summer 2022

- Used System Vue and Genesys to analyze noise figure and non-linearity (IP3, IP2, P1dB, PSAT) for RX and TX signal chains. Analysis and discussion of component choice and cascade order to maintain desired system metrics, including balancing noise and non-linearity. Studied circuit performance over temperature.
- Troubleshoot several different RF CCAs. Used VNA, Spectrum Analyzer, Power Meter, and Phase Noise Analyzer to verify a successful rework. Running, troubleshooting, and calibrating large multi-instrument test fixtures.
- Troubleshoot module level RF systems (interfacing with FPGA, cooling, firmware/scripting errors).
- Wrote MATLAB scripts to automate tests and process data for RF system with FPGA interface.

*“Eric worked on several RF analysis/simulations and tested advanced hardware from CCA to the unit level where he came up to speed in no time. Eric is extremely talented, demonstrates passion to learn new technologies, and grasps concepts very fast. Eric is also very hands-on and proactively exploring to understand how things work. He collaborates well with his team members and we look forward to his return next summer.”*  
– John Hsu, Sr. Manager, Raytheon Technologies

## Firmware and Electronics Intern (x2) – Raytheon RVS

Summer 2021 and 2020

- Proposed and developed a frame rasterization scheme in VHDL using generics to handle different configurations and allowing for rasterization ordering on the fly. Wrote supporting documentation.
- Learned/used Hyperlynx SI/PI and Altium to simulate board layouts.
- Wrote embedded C code to test system DDR and Flash memory. Wrote System-Verilog and embedded C code to display state and interface with computer via MATLAB commands.
- Configured 10-Gig Ethernet Link; Wrote Algorithm Description Documents

*“Eric is enthusiastic and interested in all aspects of engineering, which is nice to see. He communicates well, asks for help when he needs it, but also digs into problems on his own. He catches on very fast and connects different items together well, which aids in his understanding of the whole system. He’s done a great job...”*  
– Joe Costa, Sr. Principal Electrical Engineer, RVS

## Engineering Intern – American System Controls Integration Inc. (ASCII) Summer 2019

- Mechanical design of cardboard drum manipulator, flume calibration tool, conveyer support structure. (25+ Drawings in SolidWorks.) Electrical drawings, cabinet layout. (Learned SolidWorks Electrical, DraftSight)
- Troubleshooting glue dot application machine: installed and adjusted mechanical alignment guides; replaced broken motor drive requiring reinstallation of drive software, adjusted software to account for inconsistent optical sensor, wired fault output from machine to line controller, interacted with and trained factory staff, 95% unsupervised. (Plus other small projects.)

*“We typically don’t hire freshman interns, but Eric demonstrated an engineering awareness beyond his years. He worked very hard, completing several projects. Eric will be an enthusiastic contributor wherever he works.”*  
– Kevin Swier, cofounder, ASCII

## Engineering Software, Skills

- MATLAB Simulink; MATHCAD; P/LT-SPICE; System Vue; Genesys; EM Pro; Altium Designer; Vivado; Xilinx SDK; Code Composer Studio; Hyperlynx SI/PI; Solid Works; SolidWorks Electrical
- Languages: System Verilog; VHDL; C; Python; Java; RISC-V Assembly
- Toastmasters speeches, etc. - <http://youtube.com/BigHeadEric/VIDEOS>

## Dos Pueblos Engineering Academy (DPEA)

2014-2018

A structured 4 year high school program teaching engineering skills through hands-on, project based learning.

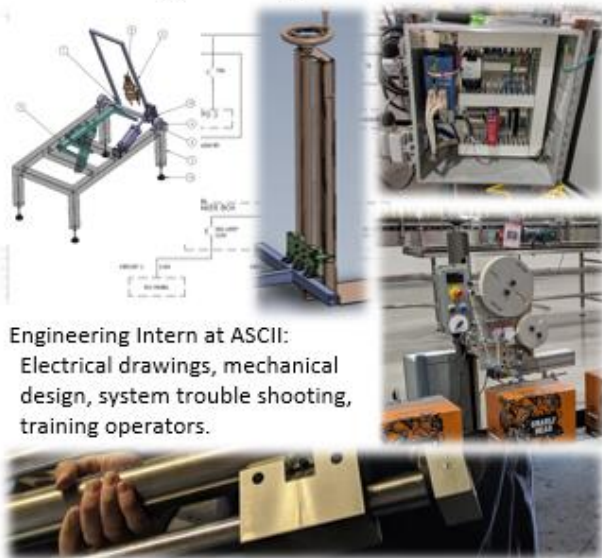
- Senior project - complete mechanical design of delta robot arm. Four degrees of freedom (X, Y, Z,  $\Theta$ ). 25+ machined part drawings in SolidWorks. Machined many of the parts. Assembled robot and 80/20 frame.

## Landscaping and Drainage Design

Summer 2018

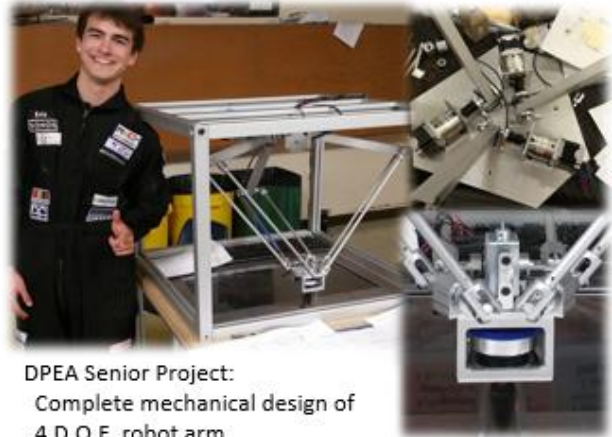
Hired by high school engineering mentor for paver installation project. Modeling and drainage calculations given constraints. Calculated quantities and purchase materials. Prepared ground: shovel, laser level, string lines, dirt compactor.

### Engineering Intern 2019



Engineering Intern at ASCII:  
Electrical drawings, mechanical design, system trouble shooting, training operators.

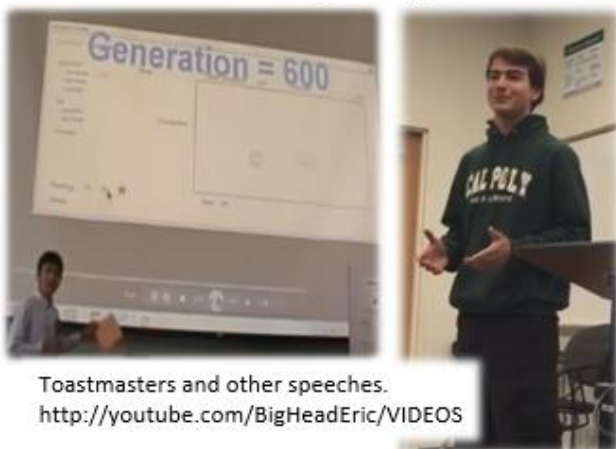
### 4 DOF Robot Arm 2018



DPEA Senior Project:  
Complete mechanical design of 4 D.O.F. robot arm.

*"I mentored Eric in the design and fabrication of a 4 DOF robot arm for his senior project at the DPEA. He is creative with good conceptual understanding and one of three students I hired for the summer to re-landscape my yard. Eric is eager to learn, hardworking and honest."* -Amir-Abo Shaer, founder DPEA

### Public Speaking



Toastmasters and other speeches.  
<http://youtube.com/BigHeadEric/VIDEOS>

### Home Electronics Lab



4Ch, 200MHz Oscilloscope, 30MHz Function Generator, 5.5 Digit Multimeter, 3GHz Nano VNA, Logic Analyzer, Linear Power Supply