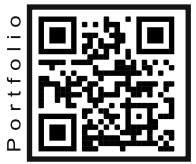


# Alexander J. Geeves-Booth

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agbooth.weebly.com



Portfolio

## Education

**California State Polytechnic University, Pomona, CA**

Fall 2018 - Fall 2021

Bachelor of Science, Mechanical Engineering - GPA 3.50

## Work Experience

**Fireglass Studio** - Studio Assistant

Spring 2017 - Present

- Operated as an independent contractor, cutting glass, preparing molds and running high temperature kilns.
- Predicted future trends from analyzing past consumption rates to minimize waste material.
- Experimented with new and different ways of manipulating glass, including its use in senior project.

**Ross Dress for Less** - Associate

Spring 2017 - Summer 2018

- Organized and stocked merchandise with a team for rapid processing.
- Excelled in customer relations and security management.

## Leadership and Development

**Cal Poly Rose Float** - Merchandise Coordinator, Treasurer and Mechanical Lead

Fall 2018 - Fall 2020

- Trained a group of volunteers to use heavy equipment and lead them to build the 'Bobbing Fish' mechanism for the 2020 Cal Poly Rose Float, 'Aquatic Aspirations'.
- Actively negotiated with several manufacturers with the design of merchandise and establishing a new order structure.
- Conducted sales analysis on past merchandise sales in order to optimize future sales.
- Created and managed a new online sales method for merchandise with optimized delivery structure.
- Organized new income structure and liaised with manufacturers about payment.

**Bronco Maker's Club** - E-Board Member

Fall 2018 - Fall 2021

- Helped with the creation and management of maker rooms, providing constructive environments and tools for all students.
- Organized and conducted club events to connect the student body and teach different methods of production.
- Instructed the use of various machines, such as a 3D printer, 3D scanner, laser cutter, CNC machines, etc.

## Projects

**Glass Strength Testing** - Senior Project

Spring & Fall 2021

- Hypothesized that the addition of coloring agents to glass changes its physical properties and designed tests to prove this.
- Administered destructive testing on glass samples using Instron 3369 with a three point bending fixture.
- Produced samples from Bullseye Artglass and fired samples to remove internal stresses.

**Warehouse Package Retrieval Device Project**

Fall 2021

- Led a team designing a warehouse retrieval robot to given requirements given by teacher.
- Organized gantt chart and weekly online and in person meetings for best efficiency and communication.
- Conducted modeling of most of project and ran FEA on internal frames and stress points.
- Determined feasibility of project with cost analysis and presented progress with project development reports.

**Rose Float Mechanism**

Spring & Fall 2019

- Led and trained a team of volunteers to build a mechanism for the Cal Poly Rose Float, 'Aquatic Aspirations'.
- Designed and built an electrohydraulic proportional valve controlled mechanism used to emulate life-like movement of fish.
- Produced a modular design, so that mechanism was built separate from the float and easily installed.

**Electrolysis and Autocatalytic Surfacing Experiments**

Summer 2020 - Present

- Experimented methods of resurfacing of both conductive and non-conductive materials to achieve a realistic metallic finish.
- Focused tests on different ways of electroplating, including developing cheap conductive paint, imbedding conductive material into resin and autocatalytic surfacing of resin.
- Expanded experiments into electroless plating, anodizing aluminum, electro-polishing and etching.

## Skills

Metal Casting | Solidworks | Fusion 360 FEA | MATLAB | VBA | FEMAP | Resin Casting | 3D Scanning | Silicone Mold Making  
Glass Casting, Blowing, Fusing, Etching | Power and Hand Tools | Electro Etching/Plating | 3D Printing | SMAW Welding | 3 Axis Mill  
CNC Laser Cutter | Plotter Cutter Machine | Leatherworking | Adobe Illustrator and Premiere | Product Development | Management