




# Nestor Ojeda

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## Experience

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**Bandsaw Blade Guide UX Design Project Lead** | Laguna Tools/UCI | Irvine, CA **Sept 2021 – Present**

- Improved the blade guide design for Laguna Tool's bandsaw using SolidWorks to add less costly features by 20%
- Monitored safety standards, inspected tools equipment for accident prevention, and raised safety concerns in designs
- Presented concepts in PowerPoint as a team of 5 with each having an analysis of the benefits and weaknesses
- Designed thrust bearing and side guide designs using SolidWorks that increase surface area by 50%
- Manufactured 3D-printed thrust bearing and blade guide using PLA High and Nylon to prototype on the bandsaw

**R&D Junior Project Engineer** | Bal Seal Engineering | Lake Forest, CA **Sep 2020 – July 2021**

- Improved automated rotary fixtures for seal pressure testing using SolidWorks to reduce manufacturing times by 10%
- Designed in SolidWorks and manufactured a 3D-printed mount for a rotary encoder to track motor going 16000 RPM
- Analyzed rotary fixture control box schematic and soldered the motor system wires into running on 240 Volts
- Programmed Arduino Mega to wire emergency system using an 8-channel relay module and MQ-2 gas sensors
- Added a functional smoke detector, stack light and emergency stop button system to ensure safety standards

## Projects

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**Golf Ball Launcher Design and Manufacturing Project** **Jan 2022 – March 2022**

- Manufactured an automatic golf ball launcher that can land golf ball in bucket between 10ft. and 20ft. at a fixed height
- Designed in SolidWorks a golf ball launcher that uses servos to control the launch angle and the release mechanism
- Programmed in MATLAB to output angle (0°- 60°) for the launcher and for Arduino to power the release mechanism
- Manufactured using 3D-Printed methods (PLA) and wired laser, braking sensors, and servos to Arduino nano
- Team of 6 produced BOM and concepts to fabricate a design to be manufactured using 3D printer and drill presses

**UCI Solids & Liquids Rocket Project** **Sep 2020 – Sep 2021**

- Designed a multistage rocket in OpenRocket to reach 50,000 ft (15,240 m) and created bill of materials for concept
- Assembled a Flight Computer using barometric sensors, breakout boards and programmed in Arduino IDE
- Designed a 3D-model of the multistage rocket in SolidWorks considering various pressures and forces analyzed

**Machine Workshop** **Jan 2020 – March 2020**

- Operated multiple machines such as a mill and lathe to cut a raw piece of aluminum into a desired shape and size
- Learned how to interpret CAD drawings and make those modifications using a mill, lathe, sander, and drill press
- Practiced hands-on manufacturing techniques in a safe and supervised environment

**Yosemite Balsa Wood Bridge** **Oct 2019 – Dec 2019**

- Designed a truss style Warren bridge model in AutoCAD using method of joints with a team of 4
- Budgeted under strict guideline of materials while calculating where tension and compression occurs using Excel
- Prototyped a balsa wood bridge model measuring 10in. by 10in. by 7in. to withstand 270 Newtons of load on the deck

## Skills

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**3D CAD/FEA:** SolidWorks (CAD & Simulations), AutoCAD, Fusion360, OnShape, Siemens NX

**Software:** MATLAB, Python, Arduino, Microsoft Office (Word, PowerPoint, Excel), HTML/CSS

**Hardware:** 3D Printing (Plastic), Soldering, Mills, Lathes, Bandsaws, Sanders, Drilling, Wiring

**Certifications:** CSWA Mechanical Design – Certified in SolidWorks – Issued in January 2021 ID:C-EWRZCV326G

## Educational Background

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**University of California Irvine** | Irvine, CA

**Bachelor of Science, Mechanical Engineering** – *Specialization in Design of Mechanical Systems*

**June 2022**

GPA: 3.3