

**Profile**

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Motivated graduate student in Mechanical Engineering and early-career professional pursuing challenging opportunities in the aerospace industry. Proven to thrive in a fast-paced environment and known for effectively applying practical skills to produce results. Seeking an opportunity to add value to a technical team by applying experience and engineering skills to contribute to project management and leadership in successful execution of research, development, marketing, and sales efforts.

**Education**

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**University of Texas at San Antonio**

Aug 2020 – Present

M.S. in Mechanical Engineering

GPA: 4.0

B.S. in Mechanical Engineering

Aug 2016 – May 2020

GPA: 3.75

Awards and Achievements:

- Dean's List (4.0 semester GPA): Fall 2016, Spring 2017, Fall 2017, Fall 2018, Fall 2019, Spring 2020.
- Boeing Scholarship, The USAA Foundation Scholarship, Seldon Leavell Scholarship, Sjoerd Steunebrink Scholarship.
- Active Member in ASME and AIAA Professional Organizations.

**Summary of Skills**

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Analysis: ANSYS, MATLAB.

Programming: NI LabVIEW

Design/CAD: Certified SolidWorks Associate, Siemens NX, AutoCAD, Inventor, and Interpretation of Engineering drawings for GD&amp;T per ASME Y14. 5.

Machining: CNC Machining – Lathe, Vertical Mill (HAAS), and Grinders (Studer and Junker),

Other: Technical writing, Process documentation and reporting, PC proficiency, Microsoft Office (Word, Excel, PowerPoint, Outlook, Project).

**Employment**

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**Graduate Research Assistant**

Aug 2020 – Present

UTSA Department of Engineering

San Antonio, TX USA

Role and Responsibilities:

- Researched sCO<sub>2</sub> Power Generation for Renewable Energy Extraction for CPS Energy project.
- Refined design of a smaller expander for the sCO<sub>2</sub> project and successfully fabricated and assembled that piston-driven expander.
- Performed critical analysis required for sealing the expander sections with dynamic O-rings.
- Heat Transfer analysis of compressible sCO<sub>2</sub> using MATLAB to perform Rayleigh and Fanno Flow analysis to find choked flow.

**Junior Manufacturing Engineer**

Mar 2020 – Aug 2020

Forma Automotive

San Antonio, TX USA

Role and Responsibilities:

- Utilized Inventor and SolidWorks to design and analyze assemblies of parts received from Toyota to update FMEA status.
- Analyzed manufacturing plant layout for a new project using AutoCAD.
- Developed detailed specification document of equipment and tooling for new plant project and reviewed with vendors.
- Analyzed the engineering change instructions received from Toyota and discussed 'Poka-yoke' (mistake-proofing) for new processes.

**Engineering Intern**

Summer 2019

Rave Gears and Machining Company

Seguin, TX USA

Role and Responsibilities:

- Verified proper GD&T and processes (turning, grinding, and milling) using NX and Inventor CAD for customer gears and pinions.
- Ground gear I.D. and O.D. to precision of  $1 \times 10^{-4}$  inches, tolerances of concentricity, and flatness using Junker and Studer machine.

**Engineering Project**

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**Project Leader**

Fall 2019 – Spring 2020

Senior Design Project (Capstone Course) – Particulate Matter (PM) Sampling Bench

Role and Responsibilities:

- Designed and Fabricated a Particulate Matter (PM) Sampling bench for Intertek's engine test cells by following the EPA CFR standards and procedures in a team of four sponsored by Intertek Carnot Emission Services. Used ANSYS for basic flow simulation of the exhaust on filter for pressure.
- Designed on SolidWorks, created a specifications sheet, performed trade - off studies, project cost was analyzed on the MS Project, created drawing package for fabrication, and prepared the operations manual and the test plan & results reports.
- Fabricated, calibrated, performance leak checked, and tested numerous PM filters via mass flow controllers, pressure transducers, and the positive displacement pump using NI LabView.