

# JAMES J. PARK

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## EDUCATION

### University of California, Berkeley

Expected Graduation: Dec. 2021

*Bachelor of Science, Mechanical Engineering*

GPA: 3.69/4.0

**Relevant Coursework:** Controls, Dynamics, Engineering Materials, Engineering Economics, Experimentation & Measurements, Fluid Mechanics, Heat Transfer, Internet of Things, Manufacturing & Tolerancing, Professional Communication, Solid Mechanics, Structure & Interpretation of Computer Programs, Thermodynamics, 3D Modeling for Design

**Skills:** Ansys (Workbench, APDL), AutoCAD, Autodesk Fusion 360, Fracture Mechanics, MATLAB (Simulink), Python, SolidWorks, Microsoft Office, Soldering, Welding, 3D Printing, Laser Cutting, English (Fluent), Korean (Fluent), Spanish (Intermediate)

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## ENGINEERING EXPERIENCE

### General Motors Company

June 2021 - August 2021

*Incoming Mechanical Engineering Intern*

Warren, MI

### Structural Integrity Associates, Inc.

June 2020 - Present

*Mechanical Engineering Intern*

San Jose, CA

- Conducted static stress analysis on pressurizer surge nozzle using Ansys APDL to identify critical stress locations
- Performed thermal stress analysis on pressurizer spray nozzle with Ansys APDL to visualize behavior within 653°F and 70°F
- Carried out Leak-Before Break evaluations on several plants, determining leakage and critical flaw size and LBB margins
- Tabulated various nozzle piping loads from prior projects to calculate and compare the SRSS moment for operational safety
- Developing pc-Crack fracture mechanics software to determine the life under a variety of crack geometries and stress states
- Automating xLPR post-processing using Python, enabling a significant increase in sample sizes of leak-before-break and rupture probabilistic fracture mechanics analysis

### Berkeley Formula SAE

September 2019 - Present

*Member of Drivetrain Subsystem*

Berkeley, CA

- Designed an easily installable chain guard and mounting tabs around the sprockets to cover from potential chain hazard
- Developed a wheel center prototype using FEA simulations to optimize wheel design strength-to-weight ratio
- Rendered the axle package and updated test data for the competition presentation; won 1st in division

### NBC Universal Studios Hollywood

January 2020 - May 2020

*Mechanical Engineering Intern*

North Hollywood, CA

- Researched Jurassic World boat parts to redesign for ease of maintenance and improved longevity by conducting a comparison analysis with Orlando's engineering drawings and communicating with the maintenance team
- Generated a boat-related engineering drawing database and a parts list for contracting a vendor
- Created a Visio flowchart visualization of the boat design process for standardized and comprehensive execution
- Established an on-site boat weight measurement method using the submerged boat volume for accelerometer testing

### Kiwibot

August 2019 - December 2019

*Robot Fleet Technician Intern*

Berkeley, CA

- Troubleshoot hardware malfunctions and replaced faulty parts including linear actuators and servos using a PWM value reader
- Conducted system testing for chassis steering, camera calibration, and GPS connectivity to ensure full functionality of robots
- Tested and soldered electric wires connecting the motor servos to the motherboard for a more consistent, stable connection

### CalSat Underwater Acoustic Vehicle Research

October 2019 - December 2019

*Fabrication Team*

Berkeley, CA

- Assembled an underwater acoustic vehicle, filling it with different metallic materials for stability while afloat
- Fabricated and tested syringe pump mechanism used to keep the vehicle submerged at specified water levels
- Constructed the bill of materials to assist proper assembly and further reproductions of the underwater acoustic vehicle

### Theoretical & Applied Fluid Dynamics Laboratory

June 2019 - October 2019

*Student Researcher*

Berkeley, CA

- Fabricated a Near Isothermal Compressor and Expander machine for compressed air energy storage
  - Ran tests on Simulink to calibrate the pressure detectors and the pressure valve camshafts for the most efficient pump cycle
  - Designed, using SolidWorks, a porous cap in the compression chamber to minimize the dead space
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## ORGANIZATIONS / EXTRACURRICULARS

Theta Tau Professional Engineering Fraternity (*Risk Management Chair/Member | Spring 2019 - Present*)

UC Berkeley Men's Club Soccer (*Inventory Manager/Player | Fall 2018*)

Student Librarian at Doe Memorial Library (*Summer 2018 - Fall 2019*)

Chem-E Car (*Mechanical Engineering Team | Fall 2017 - Spring 2018*)