# John Wiggins

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## Education

**Mechanical Engineering B.S., Music Minor** • San Diego State University • GPA: 3.30 • Graduation: May 2020

## Project and Work Experience

**Spacecraft Platform for Astronautics and Celestial Emulation (SPACE) Lab – *Assistant***       **May 2019 – Present**
Facilitating research in object detection and obstacle avoidance for trajectory optimization
- Programming Turtlebot Kobuki robot using ROS and MATLAB using PID control loops to drive to waypoints
- Experience using VICON system to detect objects in 3-Dimensional space and transmit to MATLAB

**San Diego State University Rocket Project – *Lower Airframe Lead / Avionics Engineer***       **Aug 2016 – Present**
Developed a schedule and lead the successful design and manufacturing of a liquid bi-propellant rocket
- Implemented stress analysis on structural components experiencing thrust loads
- Developed electrical systems for safety ground controls and in-flight data acquisition
- ***SolidWorks, LabView, ANSYS, KiCAD, Altium, Various Machining, Drafting, HAM Radio Licensed***
- <u>***Programming Familiarity:***</u> ***C/C++, Python, MATLAB***

Notable Designs: Galactic Aztec Mark II Lower Airframe
                      Hot Gas Purge System (HGPS)
                      Electronics Systems Bay 2.0 (ESB)
                      Methane-LOX Cryogenic Engine Test Stand

**Linear Actuated Variable Intake System – *Embedded Systems Engineer***       **Jan 2019 – Dec 2019**
Designed and manufactured electrical and controls systems for autonomous intake optimization system
- Designed custom PCB integrating CAN to RS232 with ATMEGA328P microprocessor for controls system

**San Diego State University Associated Students – *Audio Visual Lead Technician***       **Jan 2016 – Sept 2019**
Leadership position in charge of daily coordination of staff for event technical services
- Responsible for efficiency of a large team and multitasking on the job troubleshooting
- Displayed critical thinking to maintain client and staff safety in a time-sensitive work setting

Engineering Application: Adapted technical operation skills to assist in client services.

**San Diego State University Rocket Project – *President (2018-19) / Secretary (2017-18)***       **May 2017 – May 2019**
Work directly with industry leaders to help promote professional connections in engineering field
- Coordinate team of 85 while helping maintain a ***$350,000+ annual budget***
- Systems Engineering experience with safety procedures and failure scenarios
- Manage overall project schedule for hardware/software delivery and meeting event planning
- Designed new university laboratory building following state standardized regulations

Notable Experience: ***Project schedule development, procedure for testing and launching***
                      Adobe Suite (Illustrator, Photoshop, Premiere), ASANA (Project Management Software), and InstaGantt proficiency

**Themed Entertainment Association @ SDSU (TEA@SDSU) – *Co-President***       **Jan 2018 – May 2019**
Promote building connections between engineering, theater, visual arts, and business fields
- Developed design for Formula SAE Chassis integration into motion simulator

**Disney College Program - *Engineering Professional Development Study (PDS)***       **Jan 2018 – May 2018**
Shadow engineering processes at Walt Disney World Resort from an operational perspective
- Awarded ***Best Overall Presentation and Design*** at Disney's Ultimate Engineering Exploration

Engineering Application: Refine networking skills with engineering and creative teams in a diverse and innovative environment