**John Wiggins**

**jnwiggins@sdsu.edu • (707) 888-9183 • 5565 Crystal Drive, Santa Rosa, CA 95404**

**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***
* ***Programming Familiarity: 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