**Jacob Knaup**

jknaup@asu.edu

www.linkedin.com/in/jacob-knaup 480-323-5061

**Summary**

Bachelor of Science in Engineering student with experience designing and testing mechanical systems in an academic research setting, seeking an internship for the summer of 2018 in mechanical engineering.

**Education**

Bachelor of Science in Engineering, Engineering (Robotics) *Expected: May 2019*

Arizona State University, Mesa, AZ *GPA: 4.0*

Barrett, The Honors College

**Technical Experience**

ASU Integrated Design, Engineering, & Analysis Lab *December 2016-Present*

* Designed mechanical components and systems using Solidworks to meet robot requirements
* Manufactured prototypes with Computer Aided Manufacturing software, laser cutter, & 3D printer
* Devised test setups, performed experimental trials, and reported results orally and in writing
* Analyzed experimental results and compared with theoretical predictions to improve models
* Modeled systems and predicted expected behavior using Python, MATLAB, and C#
* Designed embedded force sensor using solid mechanics beam analysis and verified performance
* Communicated research progress and outcomes to nontechnical individuals in funding proposals
* Presented research findings orally with visual aids at the Southwest Robotics Symposium

Embedded Systems Design Project *Fall 2017*

* Communicated project requirements, features, and technical details during design review
* Integrated electro-mechanical sensors and actuators in an interdisciplinary team
* Coordinated team’s time and tasks using Microsoft Project resource management software

Robotic Systems Pick and Place Manipulator *Fall 2017*

* Modeled robotic mechanism kinematics and deployed model to predict system behavior
* Tested and debugged manipulator design to improve performance and repeatability

VEXU Robotics Competition *Fall 2015-Present*

* Defined robot performance requirements and benchmarked solutions to select optimal design
* Designed mechanical subsystems in Autodesk Inventor to meet performance requirements
* Modeled robot motion in MATLAB in order to tune PID position controller

**Other Experience**

ASU University Academic Success Programs *January 2016-Present*

* Communicated calculus and physics concepts to students verbally and in writing
* Scheduled and led Supplemental Instruction review sessions in calculus and physics

STAX 3D Printing, Gilbert, AZ *February 2016-February 2017*

* Collaborated with R&D team to develop educational products, workshops, and materials
* Explained and recommended 3D printing services to clients to ensure customer satisfaction

Barrett Honors Writing Colloquium *August 2016-Present*

* Communicated recommendations to improve students’ writing during tutoring sessions

**Technical Skills**

CAD (Solidworks, Autodesk), Microsoft Office, JMP, Computational Design, Modeling and Simulation, Programming (C, C++, C#, Python, MATLAB, LabVIEW), Git, Linux, OpenCV, ROS