**Jacob Knaup**

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**Summary**

Robotics Engineering junior with experience researching the simulation and optimization of mechanical systems, seeking an internship for the summer of 2018 in systems engineering.

**Education**

Bachelor of Science in Engineering, Robotics Engineering *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*

* Developed and tested robotic position and force control software in C
* Optimized robotic mechanisms by modeling them using MATLAB, Python, and C#
* Estimated system performance from simulation and selected designs for verification

**Academic Projects**

Embedded Systems Design Project *Fall 2017*

* Defined project requirements and criteria and devised diverse solution concepts
* Benchmarked and selected components using hardware requirements
* Integrated electrical, mechanical, and software subsystems in an interdisciplinary team
* Managed time and tasks using project management software
* Communicated project requirements, features, and technical details during design review
* Architected embedded system software using state chart and programmed system in C

Robotic Systems Pick and Place Manipulator *Fall 2017*

* Defined machine vision algorithm to perform object location in real time
* Programmed real-time system to move to specified coordinates using inverse kinematics

**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

Mentor of Campo Verde High School’s Robotics Team *August 2015-Present*

* Suggested design changes and debugged code, while teaching students to be self-sufficient

Barrett Honors Writing Colloquium *August 2016-Present*

* Communicated recommendations to improve students’ writing during tutoring sessions

**Relevant Coursework**

Embedded Systems Design, Vector Mechanics and Vibrations, Electricity and Magnetism, Modern Differential Equations, Applied Linear Algebra, Engineering Statistics, Robotic Systems I

**Technical Skills**

Programming (C, C#, Python, MATLAB), Microsoft Office, CAD (Solidworks), Mathcad, Windows, Linux