**INDIRA MULIA**

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**Education**

Aerospace Engineering B.S. & International Business B.A. Grade Date: June 2020

University of California San Diego | GPA 3.3

**Professional Experience**

**Bioinspired Robotics and Design Lab** Jan 2019 – Present

*Research Assistant*

* Experiment various materials to achieve flexibility and conductivity needed for anti-microbial catheter prototypes
* Create models, assemblies using SolidWorks and functional dimensioning to manufacture 3-D printed molds

*Research Assistant (Past Research)* May 2016 – Dec 2018

* Developed methods to create smart, self-folding composite structures using shape-memory polymers
	+ Streamlined automation techniques by 20% with DFM and DFA when fabricating multiple samples
	+ Generated electromechanical circuit patterns using Autodesk EAGLE that compliments every iterating design
* Created 20+ prototypes for *WowWee*, a toy company in robotic and entertainment products
	+ Investigated self-folding techniques that can be appealing to children by producing kid-friendly designs
* Manufactured 30+ prototypes for self-assembled small unmanned aerial vehicles (SUAV)
	+ Fabricated airfoil samples to investigate curved surfaces using self-folding techniques and smart composites

**Course Projects**

**Aerospace Structures Course** Jan – March 2019

*Aerospace Programmer*

* Programmed 1000> lines of code in MATLAB and successfully produced three on-time deliverables
* Extracted Excel data to analyze failure theories, margins of safety, and aerodynamic loads with 100% accuracy

**Embedded Controls and Robotics Course** Sept – Dec 2018

*Robotics Engineer*

* Designed a discrete control system with BeagleBone Blue MPU to program an autonomous self-balancing robot
* Calculated control system using MATLAB to simulate real-world capabilities

**Computer-Aided Design Course** March – June 2018

*CAD Designer*

* Designed structure able to withstand 1 kg with a construction weighing 0.26% of the load
* Took initiative to learn topology optimization in ANSYS for FEA to minimize waste material by 35%
* Created two-cam mechanism by profile generation and motion study analysis in SolidWorks

**Engineering Graphics and Design Course** March – June 2017

*Mechanical Engineer*

* Worked with a team of three engineers to design and construct a robot, with the goal of navigating around a predesigned arena, from concept-generated designs using GD&T (ANSI/ASME B4.1)
* Solved transmission problem by risk reduction and rapid prototyping a friction drive mechanism, enabling maximum torque, which increased the robot’s speed by 200% and accuracy of navigation
* Modeled 3-D CAD in Inventor and manufactured using machine shop equipment and 3D printers

**Extracurricular**

**Divergent Engineering** Sept 2016 – June 2018

*Mechanical Engineer & Resource Chair*

* Organized public documentation of the club’s supplies and logistics for 50+ members
* Increased power by 50% via implementing belt and pulley transmission system to winning BattleBot

**Software Skills:** ANSYS, AutoCAD, Creo Parametric/Pro-Engineer, Autodesk EAGLE, Fusion 360, Inventor, LabVIEW, Mathcad, MATLAB, Microsoft Office, Python, SolidWorks

**Hardware Skills:** 3D Printing (MakerBot, Formlabs), CO2 Laser Cutter, BeagleBone Blue, Digital Multimeter, Oscilloscope, DC Programmable Power Supply, UV Laser Cutter, Soldering, Power Tools, Machine Shop Equipment