Siddharth Kurwa

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Education

Bachelor of Science, Mechanical Engineering Honors — Dec 2018

- Bridges to the Future Credential Program: Design and Manufacturing Track
- University of Texas at Austin, GPA: 3.97/4.00

Experience

Engineering Intern, M3 Design — May 2018 - Present

- Designed 1 sheet metal brackets in Creo, analyzed stiffness using Pro/ENGINEER Mechanica, and coordinated manufacture with sheet metal shop
- Developed mechatronics of medical device prototype by building a hierarchical state machine, integrating 3 sensors, 4 DC motors, and 1 OLED display, and collaborating with mechanical and industrial design teams to meet specifications
- Designed power and charging circuit for mechatronic prototype by calculating electrical load requirements to size circuit components, programming Arduino-based IO, and building electronics enclosure
- Supported part assembly and tool-holding by designing and building 4 wooden and 3D-printed fixtures

Launch Intern, SpaceX — Aug 2017 - Dec 2017

- Supported Dragon 2 ocean recovery operation by building 2 Excel models to calculate loads and interferences, designing and analyzing 4 parts with Siemens NX and ANSYS static structural, working with 7 suppliers to fabricate components, writing ocean recovery procedure, and executing 3 operational tests
- Designed custom tool for ocean recovery, presented preliminary design review, and coordinated with international manufacturer to meet critical design and schedule requirements

Robotics Intern, Applied Materials — Oct 2016 - Aug 2017

- Reduced cost of silicon wafer lift on test stands from $3,000 to under $500 by designing 1 assembly in Solidworks, fabricating with 3D printer, building, and reliability testing in 1-month schedule
- Characterized robot repeatability, thermal/mass deflection, and vibration specs by building 4 extruded aluminum test stands, performing 4 experiments, and analyzing with 1 Python and 3 MATLAB scripts

Projects

Smart Cart, Independent Research Project — August 2018 – Present

- Develop control system architecture to manage obstacle avoidance and path planning using 3 I^2C-networked Arduinos, 2 encoders, 1 gyroscope, and 2 ultrasonic distance sensors
- Selected mechanical components by performing analysis of power distribution (motor sizes and gear ratios), gear tooth stresses, and driveshaft bending in 1 Excel model

Mechanical Design, University of Texas Solar Vehicles Team — Sep 2015 - May 2016

- Designed uprights to be 50% lighter by modeling and analyzing in Solidworks, resolving geometric interferences with affected subteams, and releasing part to vehicle assembly
- Developed Ackermann steering geometry to meet turning requirements and found off-the-shelf parts for assembly

Achievements

Recipient, Virginia and Ernest Cockrell Jr. Engineering Scholarship — Aug 2014 - Dec 2018
Grand Prize Winner, athenahealth 'More Disruption Please' Hackathon — Apr 2017
Recipient, Ford Blue Oval Scholarship — May 2016

Skills

Design and Analysis: ANSYS, Creo, Siemens NX, Solidworks, basic master modeling techniques
Programming: C++, LabVIEW, MATLAB, Python, Git version control
Prototyping: 3D printing, Arduino, laser cutting, machine shop tools, surface mount soldering