# Siddharth Kurwa

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## EDUCATION

**Bachelor of Science, Mechanical Engineering | GPA: 3.97/4.00** **Dec 2018**

- Bridges to the Future Credential Program: Design and Manufacturing
- Cockrell School of Engineering, The University of Texas at Austin

## EXPERIENCE

**Manufacturing Equipment Engineer | Tesla** **Jan 2020 - Present**

**Associate Equipment Automation Engineer | Tesla** **Feb 2019 - Jan 2020**

- Enabled data-driven preventative maintenance of 300+ equipment components by developing scalable cycle tracking and reporting application on human-machine interfaces (HMIs) using Ignition SCADA and SQL database
- Generated material savings of ~$600k/yr by implementing 5 autonomous equipment fault recoveries using programmable logic controller (PLC) and Ignition SCADA
- Automated high-risk manual verification process by building a sensor-triggered Python script to verify physical material
- Supported maintenance team by providing controls support to troubleshoot complex production-critical issues

**Engineering Intern | M3 Design** **May 2018 - Dec 2018**

- Owned control system development of $200k medical device prototype by programming hierarchical state machine and integrating sensors, motors, and display to satisfy mechanical and industrial design specifications
- Designed RC charge/discharge circuit for ball-pitching prototype by sizing circuit components, programming Arduino-based controls, and fabricating electronics enclosure

**Launch Intern | SpaceX** **Aug 2017 - Dec 2017**

- Developed 4 components for ocean recovery vessel by designing and analyzing Crew Dragon recovery loads and interferences using Siemens NX and ANSYS FEA
- Improved execution time of Crew Dragon ocean recovery procedure by 20% through 3 offshore trials and design iteration
- Designed custom tool to stabilize Crew Dragon during March 2019 Demo-1 ocean recovery, presented preliminary design review, and defined engineering specifications for manufacturer

**Robotics Intern | Applied Materials** **Oct 2016 - Aug 2017**

- Reduced cost of silicon wafer lift on test stands from $3,000 to $500/unit by designing assembly in SolidWorks, 3D-printing, assembling, and cycle-testing in 1-month timeline
- Characterized robot repeatability, thermal and mass deflection, and vibration specs by building 4 test stands, performing 4 experiments, and automating data analyses with Python and MATLAB

## PROJECTS

**Low-Cost Menstrual Pad Fabrication Device | Senior Design Capstone** **Aug 2018 - Dec 2018**

- Led 4-person engineering team to prototype menstrual pad fabrication devices for Red Cross to deploy in crisis regions
- Owned thermal and electrical subsystem design, analysis, and prototyping while contributing to mechanical subsystems through concept generation, design reviews, and fabrication
- Device prototype used to fabricate 200+ functional menstrual pads at $0.12/unit for local testing prior to Lebanon deployment in June 2019

**Smart Cart | Independent Research Project** **Aug 2018 - Dec 2018**

- Performed motor control and obstacle avoidance by developing control system architecture with 3 Arduinos networked over $I^2C$, 2 encoders, 1 gyroscope, and 5 ultrasonic proximity sensors
- Prototyped mechanical system by designing SolidWorks assembly and fabricating using 3D-printing, machine shop tools, and soldering equipment

## SKILLS

- Design and Analysis: ANSYS, Siemens NX, SolidWorks
- Software: Git, LabVIEW, MATLAB, Python
- Prototyping: 3D-printing, Arduino, Raspberry Pi, laser cutting, machine shop tools, surface mount soldering
- Industrial: PLC (Rockwell Automation), Ignition SCADA