

Caden Kraft

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INTERNSHIPS

HUSCO AUTOMOTIVE

Mechanical Design Engineer

Waukesha, WI

May 2022 – Aug 2022

- Determined the root cause of issue plaguing yield for over 6 years on the main solenoid production manufacturing line
- Designed dynamic fixture using SolidWorks, Ansys Mechanical, and PTC Creo capable of retroactively reworking solenoids from said lost yield saving \$120,000 in product
- Created magnetic model of the solenoid using Ansys Maxwell and MATLAB taking in both ideal design parameters and empirical testing data to validate a solution. Used the model to generativity iterate on the solenoid design fixing the issue and saving \$75,000 per year

KONBINI TECHNOLOGIES

Electro-Mechanical Engineer

Singapore, SG

Aug 2020 – Apr 2021

- Developed an E-payment device capable of converting traditional coin-based washing machines to contactless payment
- Synthesized knowledge of mechanical design and electrical engineering to build a cost-effective device that still maintained toolless integration with older machines. Used Wi-Fi capable microcontrollers on the device to create a network of smart laundry machines at each location allowing customers to pay for their cycles with Singtel Dash, NETS Flashpay, or credit card
- Created over 10 FDM 3D printed prototypes and evaluated the E-payment device rigorously before it was manufactured and successfully deployed to over 200 machines in three different countries

MOTIONAL

Mechanical Design Engineer

Singapore, SG

Jan 2020 – May 2020

- Developed an autonomous testing vehicle used for simulating pedestrian movement to train fully autonomous vehicles
- Designed testing vehicle using SolidWorks and Ansys to perform finite element analysis on the custom suspension system and gearbox. The vehicle was evaluated to withstand 1.5 tons
- Produced professional renders and stress analysis charts that were presented to senior engineers to iterate on the final design architecture. Also created SLS and carbon infused FDM prototypes of complex components

EDUCATION

IOWA STATE UNIVERSITY

Mechanical Engineering Sophomore • 3.93 GPA

Ames, IA

Aug 2021 – May 2025

Clubs and Activities:

- PRISUM Solar Car – Mechanical Director and Motors Manager
- 3D Printing Club – Engineering and Design Director

PROJECTS AND AWARDS

FRESHMAN LEADER IN ENGINEERING AWARD

PRISUM Solar Car and 3D Printing Club

Ames, IA

Apr 2022

- Recognized for my leadership and work extracurricularly through both the PRISUM Solar Car and the 3D Printing Club

NASA INTERNATIONAL SPACE STATION EXPERIMENT

Mechanical and Electrical Design Lead

Singapore, SG

Jul 2020 – Aug 2021

- Lead a team of five people to develop a biological experiment capsule examining the development of brine shrimp in a micro gravity environment on the International Space Station
- Designed schematic and PCB in Altium Designer used for monitoring the experiment. Also completed the design of the final SLA printed launch capsule

INTERNATIONAL SPACE CHALLENGE

Mechanical Design and Technical Imagery

Singapore, SG

Jul 2020 – Jan 2021

- Received the AWS innovation award and was a top 10 finalist out of 141 projects in the International Space Challenge for developing a lunar excavation rover
- Created design of the rover using SolidWorks and validated the design's performance metrics using Ansys to simulate lunar conditions. Collaborated with team members in writing a technical paper summarizing rover research and design

RELEVANT SKILLS

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|------------------------|-------------------------------|-------------------|
| • SolidWorks (CSWA/AM) | • PTC Creo | • CATIA |
| • Ansys | • 3D Printing (FDM, SLA, SLS) | • MATLAB |
| • Autodesk Inventor | • Altair CFD | • Altium Designer |