Caden Kraft

ckraft11@iastate.edu • (563) 340-5774 • cadenkraft.com

INTERNSHIPS

HONEYWELL FM&T   **Kansas City, MO**
Product Engineer   *May 2023 – Aug 2023*
- Interpreted air particle data using compatibility analysis in MATLAB that was then used to define design specifications
- Engineered fixtures using SolidWorks that both constrained and electrically connected components to a plasma chamber
- Created coupons of new plastic and composite materials using compression molding to be validated with tensile testing

TESLA   **Palo Alto, CA**
Mechanical Design Engineer   *Jan 2023 – May 2023*
- Created fixtures using Catia to validate high voltage sliding connectors for the battery on next generation Tesla vehicles
- Self-led development of new connector design during validation that retained the performance characteristics while bringing the part count from 7 to 2, eliminating all welding operations, and saving 42 million dollars per year
- Conceived a design for flexure to resolve a high tolerance stack between low voltage blind mate connectors. Created molded prototypes and an insertion force fixture to characterize the flexure performance

HUSCO AUTOMOTIVE   **Waukesha, WI**
Mechanical Design Engineer   *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 solving the issue and saving $75,000 per year

KONBINI TECHNOLOGIES   **Singapore, SG**
Electro-Mechanical Engineer   *Aug 2020 – Apr 2021*
- Developed an E-payment device capable of converting traditional coin-based washing machines to contactless payment
- Designed device in SolidWorks that toollessly integrated with machines and allowed users to utilize E-Payment options
- Device was tested, manufactured, and successfully deployed to over 200 laundry machines in three different countries

MOTIONAL   **Singapore, SG**
Mechanical Design Engineer   *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   **Ames, IA**
Mechanical Engineering Sophomore • 3.83 GPA   *Aug 2021 – Dec 2025*

PROJECTS AND AWARDS

PRISUM SOLAR CAR CLUB AT ISU   **Ames, IA**
Mechanical Director   *Aug 2021 - Present*
- Lead the mechanical subteam consisting of over 45 members through coordinating projects, machinists, and sponsors
- Engineered new battery pack high voltage system utilizing machined bus bars consolidating contactors, fuses, and current sensors without the use of any cables. This significantly reduces the maintenance time when working with HV

FRESHMAN LEADER IN ENGINEERING AWARD   **Ames, IA**
PRISUM Solar Car and 3D Printing Club   *Apr 2022*
- Recognized for leadership and work extracurricularly through both PRISUM Solar Car Club and the 3D Printing Club

NASA INTERNATIONAL SPACE STATION EXPERIMENT   **Singapore, SG**
Mechanical and Electrical Design Lead   *Jul 2020 – Aug 2021*
- Lead a team of five people to develop a biological experiment capsule examining the development of brine shrimp in a microgravity environment on the International Space Station
- Designed schematic and PCB in Altium Designer as well as the mechanical design of the final 3D printed launch capsule

RELEVANT SKILLS

SolidWorks (CSWA/AM)	PTC Creo	CATIA/3DEXPERIENCE
Ansys	3D Printing (FDM, SLA, SLS)	MATLAB
Autodesk Inventor	Siemens NX	Altium Designer