JOSHUA C. PAULSON

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EXPERIENCE

Columbus Hydraulics Company | Columbus, NE   May 2022 — Present
Mechanical Design Engineer

- Designed and developed custom hydraulic cylinders from concept to full production by collaborating with cross-functional teams and conducting thorough research to gather requirements
- Ensured manufacturability by identifying suitable processes and tools
- Revised 3D printing program for reusable TPU paint covers which reduced printing time by 60%, material usage by 40%, and eliminated need for post-processing while maintaining original functionality
- Reviewed completed drawings for design accuracy and completeness by meticulously analyzing technical specifications and conducting thorough design reviews which ensures adherence to design standards and specifications, minimizes potential errors, and produces the highest level of quality in final products
- Provided technical support to sales, production, and quality departments by promptly addressing questions and issues using effective communication and in-depth product knowledge which facilitated smooth project execution and enhanced customer satisfaction
- Assisted quality/production in evaluation and accepting/rejecting out-of-tolerance parts by leveraging expertise in manufacturing processes to identify deviations and discrepancies contributing to better overall product quality

Royal Custom Design | Chino, CA   Sept 2017 — June 2018
CAD Drafter

- Revised markup drawings daily for 8-12 projects and prioritized changes based on project progressions and deadlines to meet 100% of project deadlines
- Compiled standard part library for SolidWorks and AutoCAD by modeling parts and acquiring vendor models creating faster design and revision process
- Advised purchasing department on material selection using experience and knowledge in welding and metal working processes to keep manufacturing operation in house

PROJECTS

6DoF Motion Platform   May 2023 — July 2024

- Researched common solutions for DIY fast-acting linear actuators for motion simulators. Created preliminary design to account for all parts necessary to design and assemble a functional model. Reverse engineered purchased parts by measuring critical features and modeled parts in SolidWorks
- Tuned three-phase BLDC motor for maximum torque holding using Odrive driver

Suspension Performance Analysis | FSAE Suspension System Team   Aug 2019 — Mar 2020

- Assisted in programming MATLAB script to interact with vehicle dynamics model that iterated through roll-bar diameter and link lengths to determine optimal configuration for desired roll rate
- Calculated torque ratio between driver input and steering rack which provided the foundation for suspension system design
- Determined front and rear rocker dimensions through iterative process to keep leverage ratio consistent through suspension travel
- Collaborated with a multidisciplinary team to design, analyze and construct student formula car to compete in competition and improve placement over previous year

SKILLS

Software: SolidWorks (CSWP), MATLAB, Inventor, AutoCAD, ANSYS Mechanical, Simulink
Manufacturing Processes: Manual Lathe, Manual Mill, 3D Printing, Welding (GTAW, MIG)

EDUCATION

California State University, Sacramento | Sacramento, CA   Aug 2019 — Dec 2021
Bachelor of Science in Mechanical Engineering

Chaffey College | Rancho Cucamonga, CA   Jan 2016 — Jun 2019
Associate of Science in Engineering