

QUALIFICATIONS SUMMARY

Technical Proficiencies

- Eight (8) years of experience in SolidWorks including the use of finite element analysis (FEA) and CAM, as well as six (6) years in general manufacturing, prototyping, ASME Y14.5 GD&T and test/verification processes.

Engineering Solutions

- Facilitate engineering via oversight for manufacturing and installation, machine operation, risk assessment, root cause analysis, standard operating procedures (SOPs), and “lean” manufacturing practices.

Project Management / Development

- Leverage exceptional skills in project-focused research, analysis, investigation, problem solving, collaboration, and communication.

EXPERIENCE HIGHLIGHTS

Munro Pump, Grand Junction, CO

Computer Aided Design Engineer

9/2024 – Present

- Managed and maintained all CAD files within PDM software, ensuring proper version control and document accessibility.
- Designed professional submittal, production, and fabrication drawings, standardizing formats and procedures for improved consistency and quality.
- Participated in ISO 9001 process implementation and documentation, contributing to the development of compliant workflows and procedures.
- Collaborated with the Engineering Project Manager to refine manufacturing processes, document controls, and risk management practices.
- Spearheaded the development and release of 24 standardized pump station products, broadening product offerings and improving market reach.
- Participated in product testing, inspection, and validation to ensure quality standards and enhance product performance.
- Conducted maintenance and calibration testing of machines and measuring equipment, upholding precision and reliability in production.
- Investigated and resolved product quality issues, documenting findings and implementing solutions to prevent recurrence.
- Engaged in ideation and feasibility exercises for new product development and product improvements to drive innovation and market penetration.
- Supported manufacturing process improvements through updated assembly procedures, increasing efficiency and minimizing waste.

Contour Engineering LLC, Gig Harbor, WA

Design Engineer

6/2024 – 8/2024

- Specialized in land development using AutoCAD Civil 3D and Bluebeam.
- Modified existing site plans to comply with local and state regulations, preparing detailed stormwater reports, calculated and completed required lot grading, developing lot plans for effective water retention and mitigation, and creating lot housing layout drawings.
- Manage utility callouts to ensure accurate and efficient utility planning.

Next Venture Motorsports, Grand Junction, CO

Design Engineer

4/2022 – 8/2022

- Supported operations by drafting comprehensive documentation on design requirements and technical specifications.
- Created, printed, and modified drawings and models in SolidWorks and DraftSight.
- Developed additional documentation and SOPs for quality assurance and shipping departments.
- Developed engineering processes and procedures to enhance production quality.

- Facilitated the prototyping, testing, analysis, and revision of new product designs that addressed design challenges and evaluated alternative models.
- Prepared engineering change request (ECR).
- Developed and submitted product designs with specialized consideration for potential corrosion and wear (FMEA).
- Generated detailed SolidWorks assembly drawings encompassing company products and incorporating OEM data aligning with relevant Special Equipment Market Association (SEMA) guidelines.
- Decreased overdue orders by 25%, decreased mis-ships to less than 1% of outgoing orders.
- Increased daily shipping by 30% via the institution of new processes, procedures, and documentation.

TomCar LLC, Phoenix, AZ

Mechanical Engineering Technician

11/2021 –4/2022

- Developed and fabricated custom sheet metal components for prototype and production vehicles, ensuring high-quality standards and seamless integration.
- Performed comprehensive service, repairs, and inspections on production vehicles, diagnosing and resolving mechanical issues to maintain optimal vehicle performance.
- Educated customers on technical features and proper usage of products, enhancing customer satisfaction and ensuring safe operation.
- Manufactured vehicles from the ground up, including the installation of engines, complete drive trains, control systems, lighting, and safety systems, contributing to the efficient production of new models.
- Collaborated on the development of new parts for production vehicles, applying technical knowledge to improve vehicle performance and reliability.
- Conducted detailed inspections and produced technical reports on new products, providing critical feedback for design improvements and quality control.
- Applied GD&T principles to ensure precise fit, form, and function of components during the manufacturing and assembly processes, enhancing product quality.
- Operated and maintained a variety of machinery and equipment, including CNC machines, mills, lathes, and welding tools, to fabricate and assemble vehicle components with precision.
- Performed rigorous product testing and validation, including road tests and durability assessments, to ensure vehicles met stringent safety and performance standards.
- Assisted in the development and execution of testing protocols, analyzing test data and providing recommendations for design improvements based on performance outcomes

EDUCATION

B.S. in Mechanical Engineering

Grand Canyon University, Phoenix, AZ

2020-2024

Relevant software: Microsoft Visual Studio (JAVA/C), SolidWorks, Inventor, LabVIEW, NI MAX, NI DAQ, MATLAB Simulink, Simscape, NI Multisim, Capstone, DraftSight, Excel, Word, AutoCAD, CIVIL3D, Bluebeam

Certifications:

Certified SolidWorks Associate (CSWA) - Mechanical Design

Issued: 2021

Technical Projects

1997 Jeep Wrangler TJ Rock Crawler Build

2022-Present

Complete ground-up rebuild of a 1997 Jeep Wrangler into a street-legal, high-performance rock crawler for extreme off-road conditions, with ongoing refinements and performance improvements. (Continued on third page.)

- **Project Timeline & Scope:** The initial build spanned three months of dedicated work (June 2022 – August 2022), involving a complete teardown and complete rebuild from the frame rails. This project is ongoing, with continuous improvements and reconfigurations, including a current focus on reducing ride height and optimizing suspension geometry, specifically refining anti-squat and anti-dive characteristics for improved performance.
- **Engineering & Custom Design:** Designed and implemented a custom, long-travel suspension system to extend the stock wheelbase, utilizing advanced suspension geometry principles (anti-squat, roll center, anti-dive, and instant center) for enhanced stability and articulation in extreme off-road environments. All custom components were modeled and engineered using SolidWorks. Non-custom components were sourced from industry experts after rigorous research and verification.

- **Fabrication & Tooling:** Utilized a wide array of professional fabrication equipment, including welders, grinders, press brakes, presses, and bearing pullers, in addition to extensive use of hand tools and specialized automotive equipment. The project involved advanced welding, chassis reinforcement, and precision fabrication to ensure durability and performance under extreme stress conditions.
- **Steering Geometry:** Re-engineered the steering system for improved handling and responsiveness in off-road environments, accounting for the vehicle's extended wheelbase and large 40" tires.
- **Chassis Reinforcement:** Fabricated and installed structural reinforcements to the chassis to withstand the extreme stresses of rock crawling, focusing on key load-bearing areas.
- **Custom Body Work:** Modified body panels and components to allow clearance for larger tires and extended travel suspension, while maintaining street-legal compliance.
- **Electrical System & Interior Modifications:** Reworked the vehicle's electrical system to accommodate suspension modifications, ensuring proper clearance and functionality. Upgraded the interior with custom installations, including bucket seats, safety harnesses, and a fuel cell, replacing the stock gas tank for improved safety and space optimization in rock crawling scenarios.
- **Drivetrain & Powertrain Upgrades:** While maintaining most of the stock drivetrain, the transmission was upgraded to a high-performance upgraded version capable of withstanding the additional torque demands and rigors of off-road driving. This approach balanced performance upgrades with reliability for both competitive and recreational use.
- **Research, Problem-Solving & Learning:** The project's custom nature presented significant technical challenges, requiring independent research and application of new skills in suspension geometry, vehicle dynamics, and fabrication techniques. Refined problem-solving capabilities, relying on mathematical models and iterative testing to achieve optimal results.
- **Testing & Performance Validation:** The vehicle has been extensively tested across the rugged terrain of the Southwestern U.S., performing at a wide range of extreme rock crawling and off-road race events. Regular testing and tuning cycles have been critical in refining suspension performance, shock tuning, and overall vehicle handling.
- **Ongoing Development & Refinement:** The project remains in continuous development, with the most recent focus on fine-tuning ride height and suspension characteristics for maximum off-road capability. This iterative process highlights a commitment to precision engineering and performance enhancement.
- **Technical & Marketing Expertise:** Demonstrated expertise in advanced mechanical engineering, custom vehicle design, and performance testing, combined with the ability to generate compelling social media content and engage a large, targeted audience. This unique blend of skills has allowed for both technical and promotional success, further amplifying the reach and impact of the project within the off-road industry.
- **Content Creation & Marketing Strategy:** Leveraged the project as a foundation for building a strong social media presence. Created and curated engaging content focused on the vehicle's performance, modifications, and technical insights, reaching an audience of over 13,000 followers across platforms. Achieved a yearly reach of over 5 million impressions, establishing a personal brand centered around off-road motorsports, technical knowledge, and lifestyle content.

ADDITIONAL EXPERIENCE

Canyon Motorsports Formula (FSAE), Phoenix, AZ

2020-2022

*Executive Project Manager
Quality Assurance Executive
Aerodynamics Team Lead*

First Robotics Competition-Team 4944, Grand Junction, CO

2016-2022

*Team Mentor
Chief Executive Officer
Chief Technical Officer
Manufacturing Lead*