

Tristan R. Hanford

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EDUCATION

Purdue University, College of Engineering
Bachelor of Science, Mechanical Engineering

West Lafayette, IN
08/2022 - 05/2026

ENGINEERING & PROJECT EXPERIENCE

Summit Metal Products - Automotive Division

Batavia, IL

Lead Engineer

05/2023 – Present

- Planned and executed full engineering scope for \$200k Ford Bronco modernization projects; Led 2D & 3D CAD development of mounting systems and custom components;
- Managed a 5-person team and led testing to ensure engineering quality & client-specified standards are met.;
- Coordinated 6 primary vendors and 4 fabrication partners to meet quality, cost, and timeline requirements;
- Performed cost analysis and enforced \$120k build cost cap, maintaining margins up to 100%;
- Led full vehicle system integrations & developed control solutions for engines not commercially supported;
- Conducted 7 system-level V&V tests to validate safety, reliability, performance, and calibrate drivability;
- Maintained traceability across 5 subsystems via wiring schematics, SOP's, & BOMS

Blue White Industries

West Lafayette, IN

Design & Analysis Lead #1 - Senior Design

01/2026 – 05/2026

Project

- Developed an automated hose assembly system working cross-functionally with a 6-person team;
- Designed a multi-phase system (cut, press-fit, align, crimp), achieving 0.031" length & position tolerance;
- Ensured repeatability & manufacturability via PLC control and over 100 OTS components;
- Developed a custom caterpillar haul-off infeed for accurate length control across 2T, 4T, and 6T hose sizes;
- Integrated 2" bore pneumatics, lead screws, and direct motor drives to achieve a 46-second cycle time;
- Maintained \$5k production target and \$20k R&D budget;
- Produced CAD documentation from component level to TLA, as well as drawings and BOM's

CORE SKILLS

- **CAD** - Creo Parametric, Siemens NX, Fusion 360, LTSpice, Solidworks, AutoCAD, Tolerance Analysis
- **Engineering** - Systems Integration, Mechanical Design, Electrical Architecture, Project Management
- **Technical** - MATLAB, MS Excel, MS Project, Python, C++, Embedded Systems, Workflow Automation
- **Hands On** - Testing & Validation Procedures, Root Cause Analysis, Rotary Lathe, CNC Mill, Assembly

CERTIFICATIONS

Creo User/Modeling Specialist

Safety & Forklift Certification

Part 107 Small UAS Pilots License

PTC

OSHA

FAA

(Valid 12/25 - 12/28)

(Valid 10/23 - 10/26)

(Valid 10/23 - 10/26)

EARLY EXPERIENCE

Sweet Home Gelato

Naperville, IL

Store Manager

05/2018 – 07/2021

- Supervised ~15 Employees, Managed Training, Scheduling, & Performance
- Oversaw Daily Cash Operations Between \$1-7k
- Maintained Equipment to Ensure a Streamlined Workflow

AWARDS

Chicago Auto Show - 2nd Place

- Awarded for a fully restored 1974 Jeep CJ-5. Recognized for excellence in craftsmanship, design, and engineering.

PORTFOLIO

www.tristanhanford.com/portfolio

- Comprehensive engineering portfolio, detailed project documentation, & featured publications. (Secure *HTTPS* site)