

Tristan Linn

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EDUCATION

Stanford University – Stanford, CA Sept 2024 – March 2026 | GPA: **3.99**
M.S. in Mechanical Engineering (Mechatronics, Design for Manufacturing, Robotics)

The University of Texas at Dallas (UT Dallas) – Richardson, TX Aug 2020 – May 2024 | GPA: **4.0**
B.S. in Mechanical Engineering with Minor in Computer Science

PROFESSIONAL EXPERIENCE

Forterra – *Mechanical Engineer, Hardware Integration* May 2026 – Current

- Designed ruggedized sensor mounting systems and electromechanical hardware for autonomous ground vehicles, balancing packaging, structural, environmental, and system-level constraints.
- Led vehicle integration from project kick off through first prototype, developing drawings and BOMs, coordinating mechanical, electrical, and hydraulic integration, and resolving cross-functional integration issues.
- Performed FEA, packaging, visibility, and lighting analyses to validate designs and support DFM/DFA decisions; led cross-functional design reviews to identify integration risks.

Northrop Grumman – *Manufacturing Engineering Intern* May 2024 – Jul 2024 | Jun 2025 – Aug 2025

- Executed 90+ cross-functional engineering projects supporting manufacturing, assembly, production, and facility operations; performed root-cause analysis of assembly and tolerance stack-up failures.
- Developed a facility digital twin for process-flow planning and a tool-tracking system using Power Apps to centralize manufacturing resources.
- Developed AR/XR assembly instructions and designed/fabricated tooling, fixtures, robot-support structures, and an Apple Vision Pro adapter for XR-assisted assembly.

OTR Wheel Engineering – *Engineering Design Intern* May 2023 – Aug 2023

- Designed and reverse-engineered production mechanical components using Creo, AutoCAD, and Windchill
- Generated and released engineering drawings and Engineering Change Requests (ECRs) for global product lines

Humanoid, Biorobotics, and Smart Systems Lab, UT Dallas – *Robotics Researcher* Nov 2021 – May 2024

- Designed, prototyped, and tested electromechanical subsystems for soft and humanoid robotic platforms, integrating actuation, sensing, and structural components;
- Performed system validation and subsystem characterization to improve reliability and performance.
- Published "*HBS-1.2: Lightweight Socially Assistive Robot with 6-Ply Twisted Coiled Polymer Muscle-Actuated Hand*"

PROJECTS (tristanlinn.com)

CNC Aluminum Game Boy–Style Handheld May 2025 – June 2025

- Designed and manufactured a compact consumer electronics device integrating a Raspberry Pi, PCBs, display, battery, audio, and power management into a CNC-machined aluminum enclosure.
- Owned the mechanical architecture, internal packaging, tolerance stack-up, and enclosure interfaces
- Designed a multi-part CNC aluminum housing with sliding interfaces, press fits, and fasteners, using rapid prototyping to optimize assembly flow, manufacturability, structural robustness, and serviceability.

Amphenol FSI — Fiber Optic Connector Staking Machine Aug 2023 – May 2024

- Led mechanical and electromechanical integration of a high-precision electro-pneumatic assembly machine, converting a manual process into a closed-loop automated system with Raspberry Pi HMI and PLC control via RS-232 Modbus.
- Implemented closed-loop force control with 21 programmable profiles, achieving <1% force repeatability; conducted system characterization and validation testing to identify system-level issues.
- Applied GD&T and tolerance analysis to achieve ± 0.003 " tolerance control and reliable electromechanical integration.

22 Degrees of Freedom (DoF) Robotic Hand Mar 2022 – Aug 2022

- Designed and manufactured a 22-DOF robotic hand, focusing on mechanism design, kinematics, and manufacturability

TECHNICAL SKILLS

Mechanical: Mechanical Design, Electromechanical System Integration, Mechanisms, GD&T, Tolerance Analysis, DFM/DFA, DFMEA, Design Validation Testing

CAD & Simulation: NX, Creo, SolidWorks, Inventor, Fusion 360, AutoCAD, ANSYS, Abaqus, MATLAB, Simulink

Controls & Embedded: C, Python, Microcontrollers, Raspberry Pi, PLC Integration, Modbus, Arduino, Portenta

Hardware & Manufacturing: PCB Integration, Electronics Enclosures, CNC Machining, CAM, Mill, Lathe, FDM/SLA Printing, Sheet Metal, Welding, Mold Design

Tools: Vault, Windchill, Teamcenter MPLM, SAP, Power Apps, Power Automate