

Ian Patrick Silva Trenkle

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Portfolio



EDUCATION

Georgia Institute of Technology- Atlanta, GA	2024 - 2025
Master of Science in Mechanical Engineering	
University of Iowa- Iowa City, IA	2019 - 2023
Bachelor of Science in Mechanical Engineering	GPA: 3.74
Bachelor of Science in Electrical Engineering	GPA: 3.74

SKILLS & ACHIEVEMENTS

Software: Siemens NX, Creo Parametric, SolidWorks, Simulink, Abaqus, MultiSim Spice, OpenRocket, Ansys

Programming: C++, Java, Arduino, Object Oriented Programming, Unity, MATLAB

Technical: FEA, 3D Design, 3D Printing, Machine Shop Tools (lathe, mill, etc.), Scuba Certification

WORK EXPERIENCE

ROV Product Development Design Engineer—Yamaha Motor Manufacturing Corporation 2025—Present

- Utilizing Siemens NX, designed, simulated and fabricated key vehicle components—including an electronics tray, rearview mirror, rearview camera bracket, and passenger handhold—ensuring durability, functionality, and manufacturability for a ROV prototype.
- Designed advanced vehicle features such as a 7.1 audio system and electronic shifter, integrating mechanical design with user experience and structural performance.

Graduate Teaching Assistant – Georgia Institute of Technology 2024—2025

- Ensured students gained proficiency in CAD, 3D printing, Laser cutting, and programming by guiding them through hands-on rapid prototyping projects in mechatronics and manufacturing

Manufacturing Test Engineer Intern – Bosch USA, Charleston 2024—2024

- Utilizing Siemens TIA and Soft Comfort software, created and installed a Directional Control Valve (DCV) tester controlled by a Siemens LOGO! PLC
- Saved an initial \$10,000+ by testing over 50 “bad” DCVs pulled from the manufacturing line
- Created a single-point lesson to teach operators how to use an alignment tool in final assembly test benches properly

Undergraduate Design Engineer - University of Iowa Physics Department 2022—2023

- Designed, prototyped, and developed a re-deployable cover mechanism using shape memory alloy to protect a sensitive lunar ion analyzer, while coordinating \$20,000 in supplier purchases to support fabrication and testing.

Undergraduate Research Assistant - Human Instrumentation and Robotics Lab 2021—2023

- Redesigned and manufactured an efficient aluminum clamping assembly for a mechatronic stiffness measurement apparatus, and developed a GUI-controlled digital twin of a precision hexapod positioner using Simulink Multibody

PROJECTS & LEADERSHIP

University of Iowa American Institute of Aeronautics and Astronautics Rocketry Club 2019—2023

- Ensured stable flight of a Mach 1.3 high powered rocket by increasing material and structure considerations such as including custom cut carbon fiber fins
- Implemented original 3D printed designs in a high-powered rocket to secure the avionics and a 360-degree camera in the payload housing and the upper body of clear body tubed rocket, respectively

University of Iowa American Society of Mechanical Engineers (ASME) – Secretary, Design Lead 2019—2023

- Managed a team of 9 engineering students to model, fabricate, simulate, and test a Hovercraft built through additive manufacturing methods for ASME’s IAM3D EFX competition
- Modeled a 7005-aluminum e-human powered vehicle frame and roll cage to withstand an additional 2670 Newton vertical load and 1330 Newton horizontal load

Collins Aerospace – Transient Thermal Management of Avionics

- Researched, modeled, and simulated multiple solutions to prevent overheating in commercial avionics by designing passively cooling single-use and multi-use modular thermal management system