

Cole Thomas Fenner

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[Personal Website](#) | [LinkedIn: Cole Fenner](#)

Professional Summary

Detail-oriented Robotics Engineer with expertise in mechanical design, modeling, and hands-on prototyping. Proven leadership in competitive robotics and research-driven system optimization, with a strong foundation in 3D modeling, CNC machining, and ROS.

Education

Oregon State University — Corvallis, OR

Master of Science in Robotics (GPA: 4.00) | Expected Graduation: 2025

- ❖ Thesis: Modeling and predicting tethered projectile motion using an Odrive controller.
- ❖ Research Focus: Adjoint matrices in group-based modeling, compliant Kinova arm control, optimized path planning, and 3D robotic simulation.

Bachelor of Science in Mechanical Engineering (GPA: 3.89) | Graduated: 2024

- ❖ Focus: GD&T, Composite Manufacturing, 3D Modeling, Design
- ❖ Awards: OSU Finley Scholarship, Intel Scholarship, Dean's List, Honor Roll

Portland Community College — Portland, OR (GPA: 4.00)

- ❖ Blender Game Modeling, CNC Manufacturing, Summer Baccalaureate Coursework

Technical Skills

- ❖ **Programming:** Python, ROS, Matlab, Gazebo, HTML
- ❖ **3D Modeling:** Fusion 360, Autodesk, AutoCAD, SolidWorks, Siemens NX
- ❖ **Prototyping:** CNC machining, 3D printing, Laser Cutting, Welding
- ❖ **Engineering:** GD&T, adjoint matrix coding, composite manufacturing

Engineering Experience

First Robotics Competition Team Captain, Shockwave 4488

Aug 2017 – Mar 2021

- ❖ Designed, prototyped, and manufactured competition robots using Fusion 360 and CNC machining.
- ❖ Led a team of 30+ members to achieve recognition, including:
 - 2018 World Galileo Division Champion and Innovation in Control Award.
 - 2019 Industrial Design Award and Pacific Northwest Championship finalist.
- ❖ Led outreach initiatives, adapting toys for children with disabilities to improve accessibility.

Graduate Teaching Assistant, Oregon State University

Sept 2024 – Present

- ❖ Assisted with engineering coursework by grading, proctoring exams, and holding student office hours.

Design Engineering Intern, MEGI Consulting

June 2022 – Sept 2022

- ❖ Developed 3D models of industrial paper mill systems using point cloud data.
- ❖ Updated piping and electrical systems in AutoCAD to improve infrastructure adaptability. (P&ID)

SAE Baja Senior Project, Oregon State University

Sept 2023 – March 2024

- ❖ Led the reverse engineering and manufacturing of a limited-slip differential gearbox for CNC production.
- ❖ Utilized 3D modeling software to optimize design for manufacturability and performance.
- ❖ Conducted FEA to optimize stress tolerances, enhancing gearbox durability.
- ❖ Collaborated with a multidisciplinary team to integrate the gearbox into the SAE Baja vehicle.

Projects

Capstan Drive Robotic Arm

Independent Project

- ❖ Engineered a robotic arm using a capstan drive system, improving movement precision and force feedback.

Octocanum Drive System

Independent Project

- ❖ Designed and built a mechanical octocanum drive system, compactly integrated around a 2x1 aluminum bar. Used rapid 3D printing for prototyping and design optimization.

Swerve Drive System

Team Project– 4488 Shockwave

- ❖ Designed and fabricated a custom differential gearbox, optimizing performance while ensuring a compact corner fit.
- ❖ Integrated custom-designed subassemblies, including intakes, funnels, arm manipulators, and shooters.

Honors & Activities

- ❖ **Chess Achievements:** Founded high school chess team; multiple regional and state placements.
- ❖ **Tennis Team Captain:** Led Glencoe High School team, earning district quarterfinalist honors.
- ❖ **Officer, College Club Tennis Team:** Coordinate practices and competitions as part of the leadership team for Oregon State University's club tennis team.
- ❖ **FRC Recognitions:** Earned multiple FRC awards, including World Championship Galileo Division Winner, Innovation in Control Award, and Industrial Design Award.
- ❖ **Black Belt in Tae Kwon Do:** Demonstrated discipline and leadership through mentoring students.