

# Cole Thomas Fenner

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

## Professional Summary

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Dynamic and detail-oriented Robotics Engineering professional with expertise in mechanical design, modeling, and hands-on prototyping. Proven leadership in competitive robotics and research-driven optimization of robotic systems, skilled in 3D modeling, CNC machining, and ROS.

## Education

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**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 for group-based modeling, compliant Kinova arm control, optimized path planning, configure 3D models for 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

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- ❖ **Programming:** Python, ROS, Matlab, Gazebo, HTML
- ❖ **3D Modeling Software:** Fusion 360, AutoCAD, SolidWorks, Siemens NX
- ❖ **Hardware & Prototyping:** CNC machining, 3D printing, Laser Cutting, Welding, Fabrication
- ❖ **Engineering Skills:** GD&T, Adjoint Matrix Coding, Composite Manufacturing

## Engineering Experience

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**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 Galileo Division Champion and Innovation in Control Award.
  - 2019 Industrial Design Award and Pacific Northwest Championship finalist.
- ❖ Directed outreach initiatives and modified toys for accessibility for children with disabilities.

## **Graduate Teaching Assistant, Oregon State University**

*Sept 2024 – Present*

- ❖ Assisted with engineering coursework by grading, proctoring exams, and holding student office hours, receiving positive feedback for clear and effective communication.

## **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 2021 – Aug 2021*

- ❖ 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 finite element analysis (FEA) to validate stress tolerances and improve durability.
- ❖ Collaborated with a multidisciplinary team to integrate the gearbox into the SAE Baja vehicle.

## **Projects**

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### **Capstan Drive Robotic Arm**

*Independent Project*

- ❖ Developed a robotic arm utilizing a capstan drive system, enhancing movement precision and force control. Integrated electronics and motors for precise 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*

- ❖ Led the design and fabrication of a custom differential gearbox for a swerve drive system.
- ❖ Integrated multiple self-designed subassemblies, including intakes, funnels, arm manipulators, and shooters.

## **Honors & Activities**

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- ❖ **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:** Multiple awards, including World Robotics Championship Galileo Division Winner.
- ❖ **Black Belt in Tae Kwon Do:** Demonstrated discipline and leadership through martial arts achievements.