

# Rachel Ortiz

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## EDUCATION

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**Cornell University**, College of Engineering, Ithaca, NY

Bachelor of Science in Mechanical Engineering

**Expected May 2027**

**Relevant Coursework:** Introductory Fluid Mechanics (Fall 2025), System Dynamics (Fall 2025), Statics and Mechanics of Solids, Introduction to Computing: An Engineering Science Perspective, Differential Equations

**Cumulative GPA:** 3.67

## SPECIALIZED SKILLS

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Technical: Python, CAD (SolidWorks & Fusion), MATLAB, FEA (ANSYS), CAM (HSMWorks), Excel, Microsoft Office

Fabrication: Hand Tools, Power Tools, Manual Mill, Manual Lathe, CNC Mill, CNC Lathe

## EXPERIENCE

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**Cornell Baja Racing**, Ithaca, NY

**October 2023 – Present**

*Transmission Subteam Lead*

*July 2025 - Present*

- Designing custom Continuously Variable Transmission (CVT) for off-road racing vehicle in Baja SAE competition
- Responsible for all CVT tuning - iterating on springs, ramp profiles, etc., to maximize acceleration and low-end torque
- Responsible for overall system design and design and manufacturing of Primary Clutch
- Lead a 3-person team responsible for transmission components; co-lead driveline integration for vehicle

*Drivetrain Subteam Member*

*October 2023 – July 2025*

- Designed fully custom CVT Secondary Clutch: improved max torque capability, prevented car from getting stuck on obstacles due to belt slip, improved back-shifting, and decreased acceleration times by 0.2 seconds
- Won 1<sup>st</sup> Overall, 1<sup>st</sup> Hill Climb, 4<sup>th</sup> Acceleration, and 3<sup>rd</sup> Endurance
- Utilized FEA on CVT components to increase FOS while minimizing weight
- Iterated on helix cam profiles in conjunction with spring stiffnesses to change secondary response
- Wired hall effect sensors to engine/wheels and on-car DAQ to evaluate CVT shift curve against engine powerband
- Responsible for engine maintenance and repair: broke in and governed competition engines
- Utilized CAM software to machine custom parts on CNC mills/lathes; machined 50+ manual mill/lathe components
- Created drawings for in-house machining and utilized GD&T for outsourced parts

**Manhattan College**, *Summer Engineering Awareness Program Participant*, New York, NY

**Summer 2022**

- Participated in summer awareness programs for high school rising seniors and juniors
- Learned about chemical, civil, computer, electrical, environmental, and mechanical engineering, and physics through hands-on experiments in the laboratories
- Participated in engineering presentations from NYC-based engineers and firms

## EMPLOYMENT

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**Wegmans**, Ithaca, NY and Harrison, NY

**April 2022 - Present**

*Grocery Associate*

*July 2022 - Present*

- Maintain and stock grocery shelves, including storing and rotating products
- Assist in the cleanup and organization of the backroom, increasing the amount of space in the back and accuracy of item counts
- Address customer needs and questions and assist in training new hires

*Cashier*

*April 2022 – July 2022*

- Scan and bag customer purchases.
- Complete monetary transactions using cash, check, and credit/debit card

## COMMUNITY INVOLVEMENT

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**Cornell Society of Women Engineers (SWE)**, Member

**September 2023-Present**

## AWARDS

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College Board National Hispanic Recognition Program; National Merit Commended Scholar