

RACHEL M. GRANT

MECHANICAL ENGINEERING

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EDUCATION

Stanford University

M.S. Mechanical Engineering 2026
B.S. Mechanical Engineering 2024
Minor Creative Writing 2024

2021 - Current

Boston College

Biology & Mathematics

2020 - 2021

Henry M. Gunn High School

Activities/Societies: Board member of Youth Community Service and Bring Change to Mind Club, Symphonic Band, Varsity Volleyball and Lacrosse, National Spanish Honors Society, Scholarship winner for Scholar-athlete of the year in Cal-Hi sports (2020), Qualified top 2% for the National AMC 12 Math test (2019, 2020)

EMPLOYMENT

Stanford Product Realization Lab (PRL) · Course Assistant · Sept. 2024 - Current

- Teach 1000+ students the processes offered in the lab, including: Machining, Welding, Sand Casting, CNC Milling, Woodworking, Additive Manufacturing, and more
- Teach various structured labs for PRL courses, and supervise students working on research/class projects through year

Stanford Solar Car Project · Vehicle Dynamics Lead · Spring 2024 - Current

- Lead the mechanical team to design and manufacture components for the Stanford Solar Car Project
- Competed in the Electrek FSGP Race 2024 and plan to compete again in 2025

Stanford Inference · Mechanical Engineering Intern · Cambridge, MA · June 2023 - Sept. 2023

- Worked on backend coding projects of Pramana system (pathology slide scanning)
- Used CAD for designing and prototyping mechanical systems, researched and ideated future projects with Bangalore team
- Managed the hardware to allow newest system updates and confirmed usage for clientele visits (calibration, scanning, troubleshooting, other hardware issues etc.)

Stanford Neuromuscular Biomechanics Lab · Research Assistant in the Human Performance Lab · Stanford, CA · June 2022 - June 2023

Project: Designating Risk Factors for Overhead Athletes Through Biomechanical Analysis

- Carrying out 3D motion capture with OpenCap simulation, marker data motion capture, and electromyography (EMG) sensors
- Using OpenSim shoulder/arm models to complete high range of motion analysis of baseball pitching and volleyball hitting
- Through predictive simulation and finite element analysis, we aim to find interventions that reduce the loads to prevent injuries while maintaining or even improving performance

Wu Tsai Human Performance Alliance · Research Intern · Stanford, CA · Mar. 2022 - Aug. 2022

Project: The Biomechanics of Rowing on the Water

- Aims to identify biomechanical risk factors of lower back pain in high-level rowing athletes using Inertial Measurement Units (IMUs) and marker data to analyze 3D-motion capture
- Working towards real-world data capture of rowers during sessions on the water

SKILLS

PROGRAMMING: Python, C++, MATLAB, C, MotionGenesis

3D MODELING: Fusion360, OnShape, Solidworks

GRAPHICS: Photoshop, Illustrator, InDesign

ACTIVITIES

Stanford Solar Car Project, *Vehicle Dynamics Lead*

Stanford Club Volleyball, *Team Captain*

Stanford Band (LSJUMB), *Trumpet Player*

Stanford Flipside

Publish issues of satire articles every week

Stanford Society of Women Engineers (SWE)

Stanford Fellowship of Christian Athletes (FCA)

Varsity Volleyball at Boston College *Division 1 Volleyball*

2020 - 2021

VOLUNTEERING

Youth Drama For All (YDFA)

YDFA aims to better the lives of children with special needs. It is an inclusive theater group open to both special and general education youth, and young adults that builds friendships and support among the special education community and families.

2021 - Current