

Shayaan Balkhi

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EDUCATION

San Jose State University – Charles W. Davidson College of Engineering

Expected: 05/2028

B.S. Mechanical Engineering

San Jose, CA.

Relevant Courses: Intro to Python, Solidworks I, Intro to Materials, Multivariable Calculus, Physics II, Application of Statics

SKILLS

CAD: SOLIDWORKS (FEA, Design, Drawing), Onshape

CAM & Manufacturing: HSMWorks, CNC Milling, 3D Printing, GD&T

Productivity: Excel, Google Sheets, Kenesto

Programming: Python, Basic C++, MATLAB

EXPERIENCE

MagiKid Robotics Lab

01/2025–Present

Instructor - Full-Time Summer, Part-Time during School

Cupertino, CA.

- Taught multiple 18-week hands-on project based programming and VEX robotics curriculum to class of ~10 students in grades K–8, fostering early STEM engagement and problem solving skills.
- Collaborated with management to enhance VEX robotics curriculum, integrating programming and engineering based problem solving; achieving improved student retention and interest.
- Coached and prepared 100+ kids in leadership, teamwork, and competition strategy.

FIRST Robotics Competition (FRC) Team 5940

07/2020 – 06/2024

Design Lead (1 Yr)| Mechanical Lead (1 Yr)| Strategy Lead (1 Yr)

Redwood Shores, CA.

- Independently designed and analyzed a high-speed elevator subsystem using Onshape and FEA to model bending forces and optimize part geometry under load – contributing to a **2023 FRC World Division Finalist** and the **2023 FRC Industrial Design Award**.
- Designed dual intake mechanisms using SOLIDWORKS, reducing machining and assembly time by 30% and contributing to a **2022 FRC World Division Championship**.
- Collaborated with programming leads for CAD-to-code integration, coordinating sensor placement and geometry constraints – finishing the robot 2 weeks ahead of schedule.
- Developed a scouting system in excel using FIRST Robotics API to generate dynamic picklists and rank teams, leading to competition wins via reduction in decision making time.
- Trained 50 students in CAD, mechanical systems, machining practices, and tool safety, elevating team manufacturing capabilities and creating leaders across multiple teams.

Design Tech High School

08/2022– 05/2023

Machine Shop Assistant

Redwood Shores, CA.

- Managed shop and enforced safety protocols for a productive environment.
- Trained peers on safe operation of mills, lathes, and precision equipment.

PROJECTS

Six Degree of Freedom Robotic Arm

07/2025–Present

Cycloidal Gearbox

Menlo Park, CA.

- Designed and 3D printed a 17:1 reduction cycloidal gearbox in SOLIDWORKS; achieving 66% efficiency via iterative testing and tolerance optimization.

Arm Kinematics & Trajectory Simulator

- Developed a MATLAB simulator to compute forward/inverse kinematics and visualize end-effector trajectories, improving motion planning accuracy by 30%.