

Rohan Bansal

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Profile

Creative high school tinkerer with a love for all things robotic. Working at the intersection between hardware and software. Proactive leader with strong experience working in and leading teams, with emphasis on communication and organization.

Education

Archbishop Mitty High School

2019 – 2023 | San Jose, California

SAT: **1550**

GPA (weighted): **4.64**

- 13 AP Courses (7 Completed)
 - Relevant Coursework: AP Calculus AB + BC, AP Statistics, AP Physics C: Mechanics + E&M, AP Computer Science A + Principles

Professional Experience

Aerospace Engineering Intern

Jun 2022 – Present

Lockheed Martin Space

Performed CAD work and software data visualization on various aspects of the Glide Phase Interceptor program, under Hypersonic Defense. Simulated aerial missile data to present to the US Missile Defense Agency.

Labs Intern, Full Stack Developer

Jun 2021 – Aug 2021

CodeDay Labs

Led a team of 3 to develop a sequential music composition environment from scratch. Built innovative backend music-stitching system and API. Ranked #1 most popular amongst 69 other teams.

IT Intern

Apr 2021 – Jun 2021

Knodemy, Inc.

Handled IT technologies (Zoom, other management software) during meetings and conferences. Designed two new programming curriculums to be taught to the student participants.

Projects

Ball Radar

An advanced computer vision pipeline to detect FRC game pieces relative to a moving vehicle. Utilizes three cameras - one for image detection and mapping, two for stereo vision depth perception. Can accurately detect distance and angle to target. Optimized to run on 20ms cycles. See my website for demonstration.

TKO Electronics Simulator

An award winning desktop application to simulate circuit design of an FRC control system. Supports comprehensive circuit simulation in real time, as well as sharing through save/import. Includes models of every single system component rendered from 3D onto a 2D plane.

Facetracking Nerf Gun

A nerf gun and camera mounted into a custom 3D-printed turret enclosure, capable of 3 degrees of rotation (X, Y, Z). Utilizes OpenCV and Python to scan for human targets, providing angle-error to an Arduino PID loop. Missile is fired on successful vision lock on target.

Organizations

AMHS Robotics Team 1351

Aug 2019 – present

President (2022-Present), Software Lead (2021-2022)

Managing team of 150 students. Pioneered advanced autonomous robot software within the realms of computer vision and path following. Won awards at the national, regional, and corporate levels. Implemented attendance system software, receiving over 400 visits a week during the school year.

AMHS Computer Science Club

Oct 2019 – present

President (2022-Present), Vice President (2021-2022)

Directing the biggest club on campus for coding, handling all monetary transaction, outreach, and school events. Expanded operations and increased member retention from 10% to 85% by adapting project-based structure.

Guidey

Sep 2019 – present

Co-Founder, Chief Technology Officer

Created a nonprofit that is building an app to aid the homeless by providing an intuitive way to search for amenities. Also allows volunteers to post self-run drives and kitchens. Download on the Play Store.

ThetaHacks

Dec 2019 – Dec 2021

Founder, Co-Executive Director

Founded and organized an international hackathon aimed at making the world of tech more accessible to aspiring engineers. Personally handled over \$12k of funding (monetary & in-kind). Managed 450+ participants, 80+ submissions, 25 sponsors, and panels run by industry professionals.

STEM Power To Learn

Jun 2017 – present

President (2022-Present), Curriculum Lead (2021-2022), Instructor (2017-2021)

Teaching programming to young children in hands-on project-based bootcamps. Built 4 curriculums that are currently in active use. Increased engagement to over 30 students per camp session last season.

Relevant Awards & Certifications

Innovation in Control Systems

Monterey Bay Regional

Awarded for my creation of an innovative 360-degree radar system for FRC robots.

Paradigm Challenge Finalist 2021

The Paradigm Challenge

Awarded for nonprofit app Guidey, to help the homeless find the amenities they need.

Software Engineering Award

KLA Corporation

Awarded for Circuit Simulator, an app used by many teams nationwide to simulate the FRC control system.

Skills

Programming Languages

Java, C++, Python, HTML/CSS/Javascript, Dart, Go, Haxe, Bash, SQL

Technical Concepts

Computer Vision
Control Theory
Machine Learning
Application Design
Web Design
Computer Aided Design (CAD)
Game Development
Additive/Subtractive Manufacturing

Frameworks, Devices, Tooling

ROS, Git/GitHub, UNIX/Linux, TensorFlow, YOLOv5, OpenCV, OpenGL Graphics, LibGDX, Arduino, Raspberry Pi, NVIDIA Jetson

Personal Skills

Leadership
Critical Thinking
Teamwork
Communication
Flexibility