RISHABH GOEL

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Physics-minded builder who creates the tools, curricula, and systems I wish existed when I was learning.

EDUCATION

Rock Ridge High School, Ashburn VA - High School Diploma | Sep 2020 - Jun 2025

Relevant coursework: AP Physics C: Mechanics, AP Calculus BC, AP Statistics, AP Computer Science A

University of Maryland, College Park MD - Physics Major | Sep 2025 - May 2029

Relevant coursework: Introductory Physics: Fields; Introductory Physics: Oscillations and Waves; Experimental Physics I: Mechanics and Waves; Experimental Physics II: Electricity and Magnetism; Multivariable Calculus, Linear Algebra, Differential Equations I and II (Honors); Special Problems in Physics; Object Oriented Programming I and II (exemption exam)

EXPERIENCE & PROJECTS

ZeroClone - Open-Source Creator | Apr 2025 - Present

- Building a general learning system for two-player perfect-information games, inspired by Google DeepMind's AlphaZero.
- Implemented batched-GPU self-play pipeline and plug-and-play game adapters in C++ and Python.

ResearchTree - Open-Source Creator | May 2026 - Present

- Built a framework for turning research ideas into structured search, repeatable experiments, and scored candidate branches.
- Added Dockerized workflows for evaluating candidate branches with repeatable scorers and preserved artifacts.

UMD LHCb Group - Undergraduate Researcher | Dec 2025 - Present

- Using bootstrapping methods to estimate uncertainty in one of the trigger mechanisms in the CERN LHC.
- Collaborated with graduate students and worked with large datasets using ROOT and similar tools.

Rock Ridge HS Competitive Programming Club - President | Sep 2021 - Jun 2025

- Led and coached 15 members; placed Top-10 in multiple Chesapeake-region university contests.
- Built weekly workshops and problem sets to make high-level competitive-programming practice more accessible.

Yogic Transformers FTC Robotics Team - Autonomous Algorithms Lead | Sep 2021 - Jun 2023

- Developed sensor-fusion and vision pipelines for fully autonomous navigation; qualified for state semi-finals twice.

Quantiphi - Machine Learning Engineer Intern | Jun 2020 - Jul 2020

- Prototyped a computer-vision research project under senior mentorship and presented findings to leadership.

SKILLS

Languages: Python; C++; Java; Bash/Zsh; Embedded C/C++ (Arduino)
AI / ML & Data: PyTorch; Reinforcement Learning (MCTS, self-play); NumPy/Pandas
Systems & DevOps: Linux admin; Docker; CMake/build pipelines; Git/GitHub
Math & Science: Mechanics; Electromagnetism; Probability/Statistics; Calculus
Agentic Coding: Claude Code; Codex

INTERESTS

Particle physics, cosmology, deep learning, character-driven literature ("The Goldfinch," "A Little Life," "Pachinko") and cinema ("Whiplash," "The Pianist," "The Shawshank Redemption").