Vedant Saran

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EDUCATION

University of Maryland, College Park Expected May 2029
B.S. Computer Science & Philosophy • Focus: Machine Learning

Lexington High School 2022 – 2026

AWARDS

- **USACO Platinum (2024–25, 2025–26)** — 65th worldwide; top tier of ~15,000 competitors.
- **John Locke Essay Competition** — 3rd worldwide (Theology), 1 of 21 winners from 63,328 entrants; judged by Oxford & Princeton (2025).
- **MIT Informatics Tournament** — 35th worldwide / 5th divisional out of 500+ teams (2024–25).
- **Presidential 1776 Award** — Massachusetts representative, selected from 8,000+ participants (2026).
- **NACLO Invitational Qualifier** — 37th in the U.S. in computational linguistics (2025).

EXPERIENCE

Machine Learning Engineer - MITRE 2026 - Present
- Working on cyber intelligence (w/ ADC)

Research Assistant, ARFlow Project — Worcester Polytechnic Institute Summer 2025
Computer vision research lab under Prof. Tian Guo
- Extended ARFlow video streaming platform with RGB support and integrated FFmpeg compression, improving processing and bandwidth efficiency.
- Built Python test suites covering computer vision pipelines and compression behavior; recognized publicly by Prof. Guo for project contributions.

Co-Founder & Lead Developer — Lexington Quantitative Research Group 2024 – Present
lexqrg.vercel.app
- Designed, backtested, and deployed systematic algorithmic trading strategies generating $25,000+ in realized profit.
- Lead weekly sessions on quantitative methods, data analysis, and financial modeling for student members.

Administrator & Tool Developer — Wikimedia Foundation (Wikipedia) 2022 – Present
- Built a JavaScript anti-vandalism tool used by hundreds of editors to detect and revert thousands of harmful edits.
- Developed a C++ and JavaScript categorization tool that automates organization of thousands of articles, replacing a manual workflow.
- 20,000+ edits across CS, science, and linguistics articles with 100M+ cumulative page views; elected administrator with global community.

USACO Tutor — Independent 2023 – Present
- Teach 20+ students competitive programming, guiding them from Bronze to Platinum division using firsthand Platinum-level experience with advanced algorithms and data structures.

PROJECTS

Chess Vision & Auto-Notation 2025
Python, YOLO, OpenCV
- Real-time computer vision system that watches a live chess game from a webcam and automatically transcribes moves into PGN notation.
- Trained a custom YOLO model for piece detection on a self-built, hand-labeled dataset; used OpenCV for board detection and perspective correction.
- Wrote game-state logic that tracks moves across frames and handles edge cases like captures, castling, and promotions.

TerpTrack — UMD Schedule Automation 2026
Python, JavaScript
- Course scheduling tool for UMD students that automates schedule generation and recommends classes based on degree requirements and prerequisites.
- Parses official UMD course catalog data to surface valid schedules and flag conflicts before registration.

SKILLS

Languages: Python, C++, Java, JavaScript, C, HTML/CSS
Tools: YOLO, OpenCV, FFmpeg, Git/GitHub, Linux, algorithms & data structures