Rivaan Verma

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EDUCATION

Thomas Jefferson HS for Science and Technology | Alexandria, VA | *August 2024- Present*
- **GPA:** 4.39
- **Relevant Coursework:** AP Computer Science A+, AP Precalculus BC, Engineering Fundamentals, Foundations of CS

LEADERSHIP EXPERIENCE

Chief Programmer | UAV Club | *Sept 2025 – Present*
- Represented one of three high schools globally in the **Robonation SUAS 2025** international university competition
- Debugged and fixed code as the chief programmer for our self-made ground station software
- Engineered a custom airfoil wing using **Fusion 360** with wood and laminate for optimal lift-to-weight ratio

Systems Design Specialist | Rocketry Club | *Sept 2024 – Present*
- Competed in the **American Rocketry Challenge**
- Admitted into this highly selective and sought-after program at my school with only a 14% acceptance rate
- Utilized **OpenRocket** to design the team's primary rocket configuration for the 2025-26 competitive season
- Engineered and manufactured custom motor retainers and motors, ensuring structural integrity for launches

Captain | JV Soccer | *Spring 2025*
- Appointed captain as a freshman (typically a sophomore/junior role)
- Selected to train with the Varsity squad as a freshman due to defensive performance
- Implemented an attendance system to maximize improvement for all players

ACTIVITIES

TJ AI Research Club | *Dec 2025 – Present*
- Implementing **U-Net architecture for Brain Tumor MRI Segmentation** research
- Collaborating with **Dartmouth College faculty** to research topics and refine MRI segmentation models, maintaining a monthly technical reporting schedule

Belong! Vienna Lego Club | *Summer 2025*
- Taught foundational STEM and programming concepts to children (ages 6-10) by using LEGO Spike kits
- Developed and implemented advanced, personalized instruction in robotics, successfully guiding my student toward the creation of complex designs

TECHNICAL PROJECTS

GridFit Fitness App | *Nov 2025 – Present*
- Developed a personalized fitness UI using **Base44** to track specific health goals
- Iterated on the foundation to improve intuitive navigation and end-user accessibility

AI Stock Trader | *Oct 2025 – Present*
- Created an **AI app** using **Lovable** that predicts stock market prices and advises when to buy or sell
- Developed a predictive trading algorithm, achieving a $500 simulated/realized return within a 60-minute window through real-time data analysis of NASDAQ and the Indian stock exchange (NSE)

Natural Disaster Drone | *May 2025 – Present*
- Developed a **fully autonomous UAV** capable of map stitching and real-time detection of gas leaks, human presence, and hazards in natural disaster scenarios
- Targeting submission for the International Science and Engineering Fair (ISEF)

AI Chatbot | *Summer 2025*
- Developed a local python chatbot from scratch using an **Ollama** Large Language Model as the back end

Custom Scratch-Built RC Plane | *Sep 2024 – Present*
- Built an RC Plane from the ground up with 3 channels. Taught myself about airfoils, forces of flight, and aerodynamics for creating the design myself. Made multiple improvisations from initial designs due to crashes
- Influenced multiple other children in my community to create their own RC planes

SKILLS

- **Coding Languages: Python, Java, C++ (Arduino), HTML, JavaScript**
- **Technical: Neural Networks, Computer Vision, Machine Learning, CAD (Onshape, Fusion 360)**