# Ritvik Thakur

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## EDUCATION

**University of Maryland - College Park** — College Park, MD
*Bachelor of Science in Computer Science, Double Major in Mathematics* — *Aug. 2023 – May 2026*
GPA: 3.93

## EXPERIENCE

**Undergraduate Researcher** — August 2023 – Present
*Fire @ UMD* — *College Park, MD*
- Employed **R** for data filtering and analysis to study the impact of lobbying on policy.
- Implemented **REST API** calls to gather data and leveraged NLP for dataset refinement

**Math Instructor** — June. 2023 – August 2023
*Mathnasium* — *Germantown, MD*
- Instructed and mentored students in a wide spectrum of mathematical subjects, encompassing elementary mathematics through advanced calculus
- Enabled transparent communication between students and parents, enhancing educational partnerships and student outcomes.
- Designed and led a robotics workshop for the summer.

**Software Engineer Intern** — Nov. 2022 – June 2023
*Washington Software* — *Gaithersburg, MD*
- Developed a **React Native** essay-writing app with **Firebase** integration, utilizing OpenAI's **GPT API** for resource searching, citations, and comments, managing the full development lifecycle.
- Managed task listings and organized Scrum team members using **Jira**, while also creating **UML** diagrams and flowcharts for projects.

**C++ Team Leader** — Aug. 2021 – Feb. 2023
*Kids for Code* — *Rockville, MD*
- Virtual tutoring service targeted at children from the ages of 8 to 12. Service taught courses for **Python**, **C++**, **Java**, and **HTML CSS**
- Managed the C++ branch and directed 10+ teachers with 1900+ students from 11 different countries.
- Developed and crafted curriculum, course materials, and assignments for every session

**Summer Intern** — July 2021 – Aug. 2022
*Nobel Explorers* — *Remote*
- Collaborated within an intern team to develop a professional website for a Pakistani restaurant.
- Designed and delivered comprehensive troubleshooting and internet safety presentations, providing training to both fellow interns and employees, contributing to enhanced cybersecurity awareness.

## PROJECTS

**Mogulator** | *Python, React, OpenCV, dlib, keras, MediaPipe, Flask*
- Implemented Flask to serve a Python backend and integrated with a React frontend
- Enabled real-time streaming and dynamic web interactions for drone video feeds
- Utilized OpenCV, MediaPipe, and Keras for real-time facial detection and landmark analysis
- Designed algorithms for a computer vision-driven interactive application

**Plane Wildlife Strike Statistics** | *python, pyplot, pandas, numpy*
- Utilized pandas for advanced data manipulation of four decades' worth of airplane strike statistics
- Visualized data trends and patterns using matplotlib's pyplot collection

**Train Station Simulator** | *Java, Eclipse, Multithreading*
- Leveraged multithreading to enable simultaneous operations of multiple trains on shared tracks
- Implemented station stops and efficient passenger management for realistic simulation

## TECHNICAL SKILLS

**Languages**: C, C++, Java, Javascript, HTML, CSS, Python, Dart, R, OCaml, MIPS Assembly, Bash
**Frameworks/tools**: React, Pyplot, Pandas, NumPy, Firebase, NoSQL, OpenCV, MediaPipe, Flask