

# Armaan Sachdeva-CV

## Contact information

Name: Armaan Sachdeva

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Conscientious individual with excellent programming and time management skills, adept at problem-solving and working collaboratively in team environments. Passionate about space exploration and artificial intelligence, with a strong foundation in physics and mathematics.

## Education

### University of Southampton (Current)

MPhys Physics and Mathematics (3rd Year)

### A-Levels

- Mathematics
- Physics
- Geography
- Further Mathematics AS

## Certifications

- Kaggle Courses: Introduction to Python, Pandas, Data Visualization, Introduction to Machine Learning, Intermediate Machine Learning, Feature Engineering, Introduction to Deep Learning, Data Cleaning, Introduction to SQL, Advanced SQL, Time series, Geospatial analysis

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## Technical Skills

- Proficient in programming languages: Python, JavaScript, Rust, HTML, CSS, C++
- Experience with scientific Python libraries (e.g., AstroPy, SciPy)
- Some experience with 3D modeling (Blender) and CAD software (SolidWorks)

- Experience with bash scripting
  - Familiar with Unix systems
  - LaTeX
  - Familiar with machine learning and AI model development in python.(Pytorch, Tensorflow)
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## Soft Skills

- Communication: Excellent written and verbal communication skills gained through debating competitions, drama, and presentations for lab reports.
  - Teamwork: Proven ability to work effectively in team settings through involvement in debating, Spaceflight Society, and hospital volunteering.
  - Problem Solving: Skilled at identifying and resolving issues, demonstrated by developing solutions such as creating programs for cloud storage management.
  - Time Management: Strong ability to balance academic coursework, extracurricular activities, and personal projects effectively.
  - Adaptability: Quick learner, evidenced by mastering HTML and CSS to develop web interfaces within short timeframes.
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## Experience

### Photonics Data Science Intern – Optomel (Summer 2024)

- Developed software to analyze liquid crystal properties from smartphone images.
- Designed and implemented a machine learning model to automate classification.
- Worked as a full-stack software developer, integrating data processing and visualization.

### Mapping Software Developer – Freelance (Winter 2024 – Present)

- Developed an optimal route-mapping program for a flyer distribution startup.
- Implemented a confirmation system to verify delivery locations and employee adherence.

# **Volunteering an Extracurriculars**

## **Quantitative trading(2025-Now)**

Currently working on a quantitative trading algorithm with like minded individuals in a new startup firm called Aether.

Goal is to facilitate alpha signal research in the hopes of creating an structured pipeline from which those signals can be processed into real trading signals across a variety of markets.

## **AI Business Proposition (2022-2023)**

- Co-developed an AI-powered call center solution to reduce downtime in customer service.
- Assisted in developing the natural language processing model and securing three prospective business clients.

## **Spaceflight Society (2023-2024)**

- Contributed to developing the project's web interface, enhancing data visualization.

## **Artificial Intelligence/coding Projects**

- Developed an AI model to read and solve handwritten math expressions, improving interactive learning experiences.
- Created Python-based visualizations for physics simulations, including Uranium-235 decay and pendulum motion.
- Created my own reasoning optimized large language model using Group relative policy optimization using Llama-3.1 as a base

## **Web Browser Project (2024)**

- Designed a privacy-focused web browser to prevent third-party data tracking(runs locally)

## **Volunteer — West Middlesex Hospital (2020-2021)**

- Assisted with patient care, drug deliveries, and visitor guidance.
- Provided companionship to patients and supported hospital staff in patient pathway management.

## **Debating (2016-2019)**

- Represented school debating club in competitions, enhancing formal communication and teamwork skills.

## **Hobbies and Interests**

### **Composing**

- Writing music for a variety of pieces and styles using GarageBand.

### **Writing**

- Currently writing a novel.

### **Cybersecurity**

- Participate in penetration testing challenges.