

# Arjun Sharma

[arjun.sharma07@outlook.com](mailto:arjun.sharma07@outlook.com) | [linkedin.com/in/sharma-arjun7](https://www.linkedin.com/in/sharma-arjun7) | [github.com/ArjunS07](https://github.com/ArjunS07) [arjuns.me](https://arjuns.me)

## EDUCATION & TESTING

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### The Shri Ram School, Moulisari

New Delhi, India

*International Baccalaureate Diploma Programme*

2022-24

- Higher level subjects: Math AA, Physics, Chemistry, and Economics
- Valedictorian, scoring 44/45 in IB grade 11. Predicted grade: 45/45

*International General Certificate of Secondary Education (IGCSE)*

2020-22

- Valedictorian, scoring A\* in all 10 subjects.
- International Mathematics country topper in March 2022 exams

### Standardized Testing

- ACT 35: 35 Math, 33 Science, 36 English, 34 Reading (2022)
- APs: 5s in Calculus BC and Macroeconomics (2023), Microeconomics (2022), and Computer Science A (2021)

## EXPERIENCE

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### Machine learning and astrophysics research

June 2023 – October 2023

- Identified the applicability of PU (positive unlabeled) machine learning techniques to identify fast radio burst repeater candidates. Used PU learning to identify 18 previously undiscovered repeater candidates in the CHIME/FRB catalog.
- Selected to present at the IEEE MIT Undergraduate Research Technology Conference in October 2023
- Supervisor: Dr. Vinesh Maguire Rajpaul (University of Cambridge)

### Machine learning and full-stack development internship

June 2022 – December 2022

*BAM.money Inc*

New York City

- Developed and deployed three new algorithms to extract trading insights from 200k+ financial news articles daily
- Refactored filtering algorithm to use NLP techniques to determine article relation to stocks
- Used Python, NodeJS, Keystone, Docker, and AWS. Developed algorithms with `scikit-learn`, `spaCy`, and `nltk`

### Founder & Developer of biodiversity management platform

March 2022 – Present

*GreenCode*

[greengode.org](https://greengode.org)

- Created a platform for communities to track their biodiversity and generate customised QR codes with Python, Django, and Bulma
- Selected as one of 10 finalists globally in the Ernst & Young Environment Sustainability Challenge at the World Series of Innovation 2022, out of 1000+ participating teams
- Collaborated with iamgurgaon, Gurgaon's largest biodiversity NGO, to track information about 65+ plantations; 75+ species; and 20,000+ plants/trees; in use by 2 communities with 1800+ residents.

### Lead organizer of inter-school technology symposium

August 2022 – October 2022

*ShriTeq*

- Ideated and implemented 14 events (2x any previous year); led communications with schools; designed guidelines and rubrics for all events; led coordination with NGOs and industry expert judges
- Ideated and co-developed high school algorithmic trading competition; implemented software for hardware installations

### Lead organizer of puzzle-solving events

2021, 2022, 2023

*ShriCryptHunt*

The Shri Ram School, Moulisari

- Co-developed 60+ puzzles for intra-school puzzle-solving events (inspired by MIT Mystery Hunt)
- Led 8-member organizing team; mentored junior students. Doubled participation to 400+ students in 2023.
- Developed online platform for the event with Python, Django, and Django REST framework. Comprehensively documented for future years.

### Vice-President of Technology & Computer Club President

July 2022 – March 2024

*Student Government & Megabyte Computer Club*

The Shri Ram School, Moulisari

- Successfully co-proposed the first-ever reformation of the school student government electoral system, implementing a new instant-runoff preferential method from April 2023

- Ideated and co-organized the school's first AI Week in April 2023. Schoolwide address to 1000+ students on AI safety; developed 6 original installations to educate 250+ students about generative AI technologies; organised classroom activities for 300+ students to learn to identify AI-generated content; designed 5 posters explaining responsible use of AI
- Selected and mentored teams from grades 6-12 for 20+ inter-school competitions
- Developed and launched the club [website](#) with Astro; wrote resources, guides for students
- Conduct weekly society sessions and workshops with 30+ members of the school computer club

## Executive Editor of Physical Sciences

March 2023 – Present

*Young Scientists Journal*

[ysjournal.com](https://ysjournal.com)

- Executive Editor, Physical Sciences (April 2023 – Present): Oversee 8 departments and 30+ editors at the oldest student-run scientific journal. Led 2023 editor recruitment, reviewed applications, onboarded accepted admits
- Senior Editor, Mathematics (June 2022 – March 2023): led mathematics team of four editors, reviewed 10 submitted articles
- Computer Science Editor (March 2020 – June 2022): reviewed 15+ research paper submissions to the journal, conducting edits and revisions and communicating with authors

## Future Problem Solving Program International

2021, 2023

- Selected to represent India in the middle category at the 2021 International Conference. Ranked as one of the top eight contestants globally.
- Selected to represent India in the senior category at the 2023 International Conference
- Developed the [website](#) for the Indian affiliate of FPSPI with Bootstrap and Firebase

## Deep learning research paper

May 2021 – October 2021

- Investigated deep learning to identify fake news articles using natural language processing techniques
- Achieved state-of-the-art performance with 89.7% accuracy using novel feature combination and model architecture

## Deep learning research intern

June 2023 – Present

*Indian Institute of Technology, Bombay*

- Working under Prof. Avinash Bhardwaj and Associate Prof. Vishu Narayan at IIT Bombay to apply deep learning to segment cancer image data from a Mumbai hospital

## School Debate, MUN, and computer teams

2020 – 2023

*The Shri Ram School, Moulisari*

- Winner at 4 national-level hackathons and competitive programming events.
- Selected for 9 national-level interschool debates and MUNs; won awards in 4 (winner/runners-up/QF); top 10 speaker at 2 national-level competitions.

## Math and Computer Science volunteer at underprivileged school

May – December 2021

*Saksham Bal Vikas Sanstha*

*Gurgaon, India*

- Conducted 12 sessions teaching mathematical thinking and introductory computer science to a group of gifted middle school students at a local underprivileged school in Gurgaon

## PROJECTS

[EduDaan](#) | *Python, Django, Django REST Framework, Dart, Flutter*

- Developed a novel volunteer tutoring platform based on the 2020 Indian National Education Policy
- Presented to expert judges from the Indian government and private industry at the Government of India-backed Smart India Hackathon 2022. One of five national winners in the education category; one of fifty winners across categories out of 3000+ submissions.
- Procured \$300+ funding from the Innovation Cell of the Ministry of Education

[Bot Xchange](#) | *Python, Keras, scikit-learn, Pandas*

- Ideated and co-developed a first-of-its-kind algorithmic trading inter-school competition at ShriTeq 2022
- Developed sample projects for participants; designed three sample trading algorithms, using an LSTM-based neural network for time-series predictions; wrote extensive documentation for code requirements

## TECHNICAL SKILLS

**Languages:** Python, JavaScript, Dart, Swift, Java, Julia, Wolfram Language, SQL, Bash, LaTeX, HTML/CSS

**Frameworks & Tools:** Keras, scikit-learn, SciPy, Pandas, Django, Flask, Astro, TailwindCSS, Flutter, SwiftUI, Figma