Arjun Sharma

arjun.sharma07@outlook.com | linkedin.com/in/sharma-arjun7 | github.com/ArjunS07 arjuns.me

EDUCATION & TESTING

The Shri Ram School, Moulsari   New Delhi, India

International Baccalaureate Diploma Programme   *2022-24*

- Valedictorian, scoring 44/45 in IB grade 11. Subject topper in Math AA HL and Economics HL.
- Predicted grade: 45

International General Certificate of Secondary Education (IGCSE)   *2020-22*

- Valedictorian, scoring A* in all 10 subjects.
- Cambridge Outstanding Learner Award for being the country topper in India in International Mathematics

Courses

- *Building a modern computer from first principles*: computer engineering course by the Hebrew University of Jerusalem (2020)
- *Big Bang Physics*: particle physics course by CERN scientists and educators (2020)
- *Inspirit AI Scholars*: artificial intelligence bootcamp by Stanford University alumni (2019)

EXPERIENCE

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

GreenQode   *greenqode.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, Moulsari*

- Co-developed 60+ puzzles for intra-school puzzle-solving events (inspired by MIT Mystery Hunt)
- Led 9-member organizing team; mentored junior students. Doubled participation to 300+ 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, Moulsari*

- 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*
- 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, Moulsari
- 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 award.

Math and Computer Science volunteer at underprivileged school   May – December 2021
Saksham Bal Vikas Sanstha   *Gurgaon, India*
- Conducted 19+ 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