

Shreenabh Agrawal

shreenabh@iisc.ac.in
+91 90224 11269
shreenabh.com

Address: E-58, E Block
Indian Institute of Science
Bangalore - 560012

EDUCATION

Indian Institute of Science, Bangalore, India
Bachelor of Science (Research), Physics (Etd: 2025)

GPA (10 Point): 9.8

JEE Advanced, Qualified

AIR: 787

KVPY Fellow, SA 2019

AIR: 136

Indian Olympiad Qualifier in Physics, Part I 2021

National Top 1%

Indian Olympiad Qualifier in Physics, Part II 2021

Qualified

Indian Olympiad Qualifier in Chemistry, Part I 2021

State Topper

Indian National Astronomy Olympiad, 2020

Qualified

COMPUTER SKILLS

Languages: Python, C, C++, Java, SQL, Bash, \LaTeX , OCaml, Wolfram Language

Web Development: HTML, CSS, JavaScript, Apache, Nginx, NextJS, Vercel

Beta Testing: OpenAI GPT-3, OpenAI Codex, GitHub Copilot, MidJourney.

AI/ML: Reinforcement Learning, Large Language Models, Autoencoders, SVM, GANs.

Cloud: Kubernetes, Docker, Google Cloud Platform, Amazon Web Services, Microsoft Azure, DigitalOcean.

APIs: OpenAI GPT-3, OpenAI Codex, WolframAlpha, Postman (dev).

Libraries: NumPy, Pandas, Matplotlib, Manim, Tensorflow, Keras, Qiskit

AWARDS

PMRBP '21: Awarded the Pradhan Mantri Rashtriya Bal Puraskar 2021 in the category of Science and Innovation. PMRBP is the Highest Civilian Honor in India for people aged under 18.

Diana Award '21: The Diana Award is the most prestigious accolade a young person aged 9-25 can receive for their social action or humanitarian work.

ISEF Finalist '20: Represented India at the Regeneron International Science and Engineering Fair 2020. ISEF is the world's largest science competition for high school students.

OPhO Second Prize '22: Represented IISc at the Online Physics Olympiad 2022 and stood second from all over the world in the Open round. OPhO is the largest online Physics Olympiad.

IYMC First Prize '20: Stood First in the world in the International Youth Math Challenge, one of the biggest online math competitions for students from all around the world.

WORK

Safe Reinforcement Learning: In-semester project at IISc Bangalore under the supervision of Prof. Shishir N. Y. Kolathaya. Working on Safe RL deployments using DQN, TD3 and DDPG with applications to Autonomous Electric Vehicles and Legged Robots.

Corporate Relations @ Pravega '22: Core coordinator for corporate relations. Played key role in pitching the fest and securing deals from brands like Airbus and Coca Cola. Pravega is IISc's undergraduate fest and is one of the biggest college events in India.

Epsilon Code: Sole developer. Epsilon Code is a tool that can generate Python code from plain-text description (in natural language) for you. It can also get you instant debugging help- much like StackOverflow responses but faster and better than what humans can do!

Magnum: Team Leader and Developer. Magnum is an Open-source toolkit to turn Math problems into elegant video animations. Integrates GPT-3, Wolfram Alpha, and Manim to create animations of solving equations and plotting graphs automatically.

IGMO: Developed the tech stack for the International GAMMA Mathematics Olympiad 2020. The virtual olympiad attracted 2500+ participants from 80+ countries. Led the Tech Team for IGMO 2022 (sponsored by Jane Street and AoPS).

Fight against Yellow Mosaic Virus: Prepared Novel and Effective *Tridax procumbens* Extract for Protection against Yellow Mosaic Virus in *Abelmoschus esculentus* (Okra).

RESEARCH PUBLICATIONS

‘Empirical assessment of efficiency of entropy source for random number generators using autocorrelation function test’

in Volume 117(228-234) of World Scientific News (WSN), EISSN 2392-2192.

‘An Open Source GPT3 based tool for Computational Mathematics : MAGNUM’

presented in ISDSI-Global Conference 2021: Leading business in a FLUID world held at Indian Institute of Management, Nagpur from December 27-30, 2021.

‘Software Pseudo-Random Number Generators to Hardware True Random Number Generators: a transition in Data-Security’

published in International Journal of Scientific Research in Computer Science Engineering and Information Technology, Volume 5-Issue 2, March April 2019.

‘The world beyond Electrons, Protons and Neutrons’

published in Science Reporter, published by NISCAIR, CSIR in November 2018 issue, Vol. 55 No. 11, ISSN 0036-8512

‘Mahila e-Haat: a gender-based e-commerce initiative’

at IIM Indore in the 2019 IIM Indore NASMEI (North American Society for Marketing Education in India) Summer Marketing IS Conference held on 26-28 July 2019, published in Emerald Publishing.

INVITED TALKS

TEDx: “Alchemy of Innovation” - Explained the systematic process of researching and developing the right personality for research. I talked about the elements of curiosity, hypothesis, experimentation, interaction and innovation.

UNESCO Futures of Education: Participated in Futures of Education Consultation session. UNESCO’s initiative is an ambitious attempt to catalyze a global conversation on how education, learning and knowledge should look like in 2050 and beyond.

MEMBERSHIPS

ISWA: International Science Writer’s Association - The world’s oldest international science journalists association, with members on six continents.

ISODN: Chair member of International Science Olympiad Discord Network. A Network of Discord partnered servers with 27000+ members in total, aimed at International Science Olympiads.

GAMMA: Chair Member of Global and Multicultural Mathematical Association. We are an association of 8 Mathematics lovers on Instagram with a combined following of more than 400,000.

SEK Elite Scholarship: IVL, together with the Swedish Institute, arranges the two-week SEK City Elite Scholarship Camp in Sweden for students from India and China.