Gursharan Singh

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🌐 https://gursharan2803.github.io/

RESEARCH INTERESTS

» Quantum Machine learning
» Machine learning
» Experimental High Energy Physics

» Statistics
» Optimization
» Asteroseismology and Astrophysics

RESEARCH EXPERIENCE

📅 present **Asteroseismology**

⚲ TIFR-MUMBAI INDIA

» **Supervisor**: *Prof. Shravan Hanasoge*
  » Oscillatory Spectra Analysis Using
    Machine Learning Methods **Deep Learning**

📅 15/06/2024 **CMS experiment**

⚲ TIFR-MUMBAI INDIA

» **Supervisor**: *Dr. Rajdeep Chatterjee* , **Prof. Gobinda Majumder** , **Dr. Shilpi Jain**
  » Variation of the response of Electromagnetic Calorimeter in CMS experiment.
    Study performed with simulated electrons

TEACHING EXPERIENCE

📅 **18/08/2023–12/12/2023**

I was a Teaching Assistant for the course Mathematical Methods (PHY-103.1)
instructed by **Prof. Shravan Hanasoge**, *at TIFR Mumbai*

📅 **12/10/2022–present**

Teaching Science, Physics, Mathematics for the Edurved - Not-for-Profit Organization

📅 **12/01/2023–20/07/2023**

Taught Science, Physics, Mathematics for the TIFR student initiative teaching program

📅 **29/01/2023 , 12/02/23 , 01/03/23**

**Taught about LHC [Large hadron collider] and JWST [James Webb Space Telescope]
at different school Navy children school[New Navy Nagar]
Kendriya Vidyalaya[New Navy Nagar and IIT Bombay]**

SCHOOLS ATTENDED

📅 **28/08/2023–08/09/2023**

Statistical Methods and Machine Learning in High Energy Physics
ICTS, TIFR Bangalore
Skill Enhancement: Acquired data analysis, machine learning, and statistics.

📅 **28/01/2024–10/02/2024**

Experimental High Energy Physics School on Software Development
HBCSE, TIFR Mumbai

📅 **08/06/2024–13/06/2024**

Participated in a Semester Trip to GRAPES-3
GRAPES-3 Observatory, Ooty, India
Experience: Gained hands-on experience of the experimental and
observational setup of cosmic ray detectors.

📅 **01/05/2022–05/05/2022**

HEP Software Foundation (HSF) INDIA
TIFR Mumbai
Experience: Learned about basic software development and GPU working.

SKILLS

» **Languages:** C++, Python.

» **Tool and Technologies:** $LaTeX$, HPC.

» **Framework and Libraries:** PyTorch, TorchQuantum, TensorFlow, Scikit-Learn, Qiskit.

» **Others:** Google Workspace, Science Communication

EDUCATION

📅 2022–present   MS Degree

📍 TIFR MUMBAI

» Majoring in Physics

📅 2019–2022   BS Degree

📍 Kirorimal College Delhi University

» Majoring in Physics with minor degree in Mathematics
» Grand CGPA: 9.162, Division: First

ACADEMIC ACHIEVEMENTS

» Qualified **GS TIFR ALL INDIA EXAM For Physics.**

» Qualified **Joint Entrance Screening Test (JEST) Physics exam 2022, secured All INDIA rank 16.**

» Qualified **JAM**, 2022 with All INDIA rank 421.

EXTRACURRICULAR ACTIVITIES

» Volunteered for edurved - Not-for-Profit Organization working in the field of Education and Training to provide quality education, counseling and infrastructure to children in need.

» Volunteered for the "National Science Day" event at TIFR Mumbai

» Volunteered for the "Founders Day" event at TIFR, Mumbai

» Volunteered for the "Science Exhibition" at Kirori Mal College, Delhi University

» Organized academic talks and outreach activities for high school students to inspire interest in science and physics.

LANGUAGES

» Hindi (native)

» English

» Punjabi