Agni Keyoor Purani
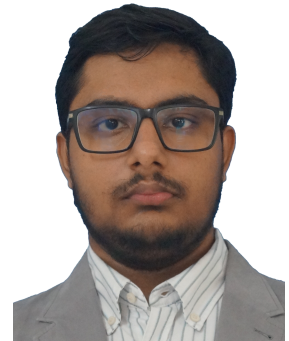
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Phone: +91 9895487545
Area of Interest: Particle Physics
Date of Birth: July 31, 2002
Gender: Male
Nationality: Indian

EDUCATION

Indian Institute of Technology Kharagpur	West Bengal, India
Integrated MSc. in Physics (Minor in Mathematics), GPA: 9.43/10.00	2019–2024(Expected)
Central Board of Secondary Education	India
All India Senior School Certificate Examination (Class 12), Score: 96%	2019
Central Board of Secondary Education	India
All India Secondary School Examination (Class 10), CGPA: 10.00/10.00	2017

CERTIFICATIONS

Qiskit Global Summer School	IBM Quantum
Certificate of Excellence	August 2020
Deep Learning Specialization	deeplearnig.ai, Coursera
Consists of 5 courses which included CNNs, GAN, etc.	August 2020

SKILLS

- **Programming Languages:** FORTRAN 90, C, C++ (STL, OpenCV, Geant4), ROOT CERN, Octave, HTML, CSS, Arduino, LaTeX, Python (OpenCV, pandas, NumPy, SciPy, scikit-learn, flask, Matplotlib, Qiskit, PyTorch), OpenMPI (C++ and FORTRAN).
- **Applications and Tools:** MATLAB Simulink, SolidWorks, LTSpice, ROS, SQL, HTcondor.

PROJECTS

Symmetry Methods in Physics (Ongoing)
Finite Groups and semi-simple Lie algebras under Prof. Ananda Dasgupta, IISER Kolkata through NIUS program.

On the radiation by charged objects in gravitational field (2021)
A mini-project done as a part of classical mechanics 2 course (PH31007).

Design Study of Scintillating Crystals as Electromagnetic Detectors using Geant4 (2021)
A small project under Prof. Kajari Mazumdar, TIFR Mumbai.

Theoretical Understanding Of Kármán Vortex Street (2021)
A mini-project done as a part of fluid mechanics course (PH20101).

Modified Linear Tangent Guidance (2020)
A mini-project done as a part of classical mechanics course (PH20001).

Super Resolution (2020)
Implementation of SRCNN using SSIM Loss to generate super resolution images.

ScamCanner (2020)
A program that uses SURF and logistic regression to output the image as scanned document.

Russian Text Detector (2020)
A ROS program that takes video feed and identifies a matching Russian string using TessaractOCR.

Kalman Filter Implementation (2020)
A python script that implements Kalman filter to remove false positives and add missing data from a csv file.

Coursework

- **Physics:** Nuclear and Particle Physics, Quantum Mechanics, Electrodynamics, Classical Mechanics, Fluid Mechanics
- **Mathematics:** Group Theory, Real and Complex Analysis, Linear Algebra, Partial and Ordinary Differential equations
- **Computing:** Data Structures and Analysis of Algorithms, Computational Methods, High Perforamce Computing

Languages

- **English:** Excellent proficiency
- **Hindi:** High proficiency
- **Gujarati:** Moderate proficiency
- **German:** A1-level proficiency
- **French:** A1-level proficiency

Scholarships and Academic Awards

- NIUS Physics Fellowship, HBCSE (TIFR), India — 2020–Current
- Inspire Scholarship for Higher Education (SHE), Dept. of Science & Technology, Govt. of India — 2019–Current
- JEE Advanced, National Rank 5877 (among about 173,000 registered) — 2019
- JEE Main, National Rank 3020 (among about 1.15 MN. registered) — 2019

Extracurricular Activities

- Software Team Member, Aerial Robotics Kharagpur, IIT Kharagpur) — 2020–Current
  Using deep learning, computer vision and other methods to achieve special tasks with the Drones. Also designed the website for the lab.
- Member, TeamKART, IIT Kharagpur — 2019–2020
  Design and Development of new formula style cars Solidworks and worked on electronics for data acquisition.
- Nexus Competition held during Kshitij (Annual Technomanagement fest of IIT Kharagpur) — 2020
  Awarded First place for the event. It was mainly a computer vision problem where a bot has to recognize shapes, colour and custom barcodes and take decisions accordingly.
- Volunteer & Unit Leader at National Service Scheme — 2019–2021
  Led a unit of 40 volunteers and won the best volunteer award in the unit for the camp in December 2019.