

Praveen Prabhat

2nd Year Undergraduate
Biological Sciences and Bioengineering

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Academic Qualifications

Year	Degree/Certificate	Institute	CPI/%
2019 - Present	B.Tech	Indian Institute of Technology Kanpur	6.88/10
2018 - 2019	B.Tech	National Institute of Technology Patna	6.8/10
2018	CBSE(XII)	St Joseph Public School, Dalshingsara	80%
2016	CBSE(X)	St Jude's Public School, Barauni	10/10

Internship Experience

- **Drug Discovery for SRAS coronavirus 2 with Nanotechnology** (April 29 2021 - Ongoing)
Mentor: Dr. Bodhisatwa Das, IIT Ropar
 - learned and Analyzing the best potent drugs for the **SARS-CoV-2** virus **main protein complex** (6lu7) and **spike protein**.
 - Successfully analysis **50+** Drugs both **antibacterial drugs** and **Herbal Drugs** for the inhibition of **SARS-CoV-2** virus.
 - A docking based comparative analysis with the best potent drugs form both **traditional Herbal** and **antiviral** drugs against COVID-19 therapy, using **AutoDock**, **Pymol**, **PyRx** stimulation with Combinatorics to get best drugs.
- **Perovskite solar cell defect passivation for stability** (May 16 2021 - Ongoing)
Mentor: Dr. Kanwar S. Nalwa, IIT Kanpur
 - Increase the stability of a hybrid organic-inorganic lead or tin halide using **SCAPS1-D** by defect **additive engineering**.
 - The throughput screening shows the batter efficiency of **22-25** percent in the open environment with batter stability with Extrinsic factors and Lattice stability and electrode diffusion and reaction were found more efficient and stable.
 - The **DFT** calculation found that organic cation and anions **-Cl₂-NH₂-SH** can passivtes the defection antisite defect.

Key Projects

- **Color perception analysis of using DNN** (May 22 2021 - Ongoing)
Under: Brain and Cognitive Society, IIT Kanpur
 - Implemented the toolbox **DNNBrain** to formulate of convolutional neural networks and brain-mapping with FMRI dataset.
 - Successfully implemented **Deep Neural Network** with multiple layers between the input and output layers of **BOLD5000 FMRI** dataset which is integration of **ImageNet**, **COCO** Dataset of both animate and inanimate objects.
 - Collective result of FMARI data from different stimuli which generates different image in **Visula cortex** of Brain, which can be use in **Bioinformatics** for the **Motif** or to design **Targeted drug delivery systems** of any incurable disease.
- **Dynamics of life** (April 3 2021 - June 12 2021)
Under: Stamatics Society, IIT Kanpur
 - Learned and worked on problems related to a linear and nonlinear bifurcation of neural signal transmissions works.
 - Analyzed the SEIR model for COVID-19 dynamics for incorporating the environmental and social distancing.
 - Analyzed the fractal and chaos which correlated with individual health patterns, which differs with the surrounding.
- **linear model to distinguish flowers genus of Iris** (Jan 3 - Jan -16 2021)
Under: ShapAi
 - Accomplishes Iris flower data set to distinguish 50 samples from each of three species of Iris Setosa, Virginica, and Versicolor.
 - Using python and **Matplotlib**, **Pandas**, **Numpy** created ml model to predict the types of flowers from Iris dataset.
 - The accuracy of this model was **97%** in predicting the difference in flowers with a linear discriminant model.

Technical Skills

- **Programming Languages:** C, C++, HTML, CSS. **Drugs discovery tool:** Pymol, Autodock, Vina, PyRx, Biovia DS.
- **Software and Libraries:** Git, Numpy, Matplotlib, Pandas.

Relevant Courses

Manufacturing Processes I-(A) Fundamentals of Computing Bioinformatics and Computational Biology	Manufacturing Processes II -(A) Organ System, Physiology And Anatomy Bioelectricity
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Extra-Curricular Activities

- Counselled 30 class 12 students towards science and technology careers as a part of IITK OpenHouse Diamond Jubilee.
- Healthcare Innovations during COVID Outbreak workshop organized by the Computer Science and Engineering IIITDM Jabalpur.
- volunteer at **Shiksha Sopan** under **Prof. H. C. Verma** for spreading my knowledge to others who need it.
- Worked as an Executive Election commission IIT Kanpur to conduct an election of **3000+** campus junta for Gymkhana.