

# DEEPAK BHAMBHANI

Aspiring astrophysicist (MSc in Physics) with hands on experience in laboratory and data handling .

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Gogeta2100

Bhopal, India



## RESEARCH EXPERIENCE

### Research Project

#### Raja Ramanna Center for Advanced Technology

Dec 2022 – Jun 2023

Indore

#### Guide- Dr. MK Tiwari

Elemental analysis of powder samples using synchrotron-based X-ray fluorescence analysis.

- The project was to calibrate Solid Drift Detector and thus create Ga standards in cellulose matrix for use as an internal standard.
- As part of my project I was required to operate synchrotron ED-XRF experimental setup at  $\mu$ XRF bl-16 at INDUS-2 synchrotron source facility.
- I analyzed the synchrotron XRF data using Python and PyMCA-based spectral analysis.

## PERSONAL PROJECTS

### Project 1

#### Black Hole Simulation in Python

##### Gogeta2100/Black-Hole-Simulation

A dynamic simulation of a black hole, showing swirling accretion disks, orbiting stars in elliptical paths, and bending light rays captured by gravity.

### Project 2

#### CBT-MCQ Exam Simulator using Python

##### Gogeta2100/CBT-MCQ-Exam-Simulator-using-Python

A full-screen GUI-based multiple-choice test system with real-time navigation, timer, marking, and detailed performance tracking – perfect for mock exams and practice tests.

## EDUCATION

### M.Sc. in Physics

#### Institute for Excellence in Higher Education, Bhopal

Marks- 3387/4400 or 76.9%

Grade - First with distinction

July 2021 – Aug 2023

### B.Sc.(Hons.) in Physics

#### Institute for Excellence in Higher Education, Bhopal

Marks- 5635/7200 or 78.2%

Grade - First with distinction

July 2018 – July 2021

## MY LIFE PHILOSOPHY

*“Curiosity drives me to ask questions, chase ideas, and explore the unknown through science.”*

## TECHNICAL SKILLS

Python (NumPy, SciPy, pandas, Matplotlib)

Astropy/FITS handling

Data Analysis

LaTeX

PyMCA

MS Office

OriginPro

Git

Linux

## STRENGTHS

Hard-working

Eye for detail

Curious

Collaborative

Solution-driven

## SOFT SKILLS

Collaborative

Team-oriented

Solution-driven

## LANGUAGES

English



Hindi



## ADDITIONAL COURSES



### Introduction to Astrophysical Fluids Instructor- Prof. Supratik Banerjee

Learned about solar winds, sunspots, solar flares, accretion disks, and star formation.



### Astronomy Research with Data Analysis in Python Instructor- Spartificial Innovations

Key skills learned: FITS handling (Astropy), image scaling (ZScale/MinMax), convolutional filtering, feature extraction, Pandas-based time-series and tabular analysis.



**Intro to Astro 2025 Workshop**  
**Instructor- Dr Fei Dai, University of**  
**Hawai**

Starting from Linux commands gained basic knowledge of topics like exoplanet detection methods, how to read scientific papers, how to access large scientific dataset online, Git and GitHub, Python-NumPy, Matplotlib, Scipy/Astropy and Pandas, Model fitting.