MEET VYAS

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EDUCATION

Ahmedabad University   Gujarat, India

B.Tech. in Mechanical Engineering with Minors in Physics and Mathematics (GPA - 3.28/4)   *August 2020 – May 2024*

SUMMER SCHOOLS

IAIFI Summer School 2024   MIT

Theme - AI and Statisitics in Physics   *August 2024*

Zwicky Transient Facility (ZTF) Summer School 2024   University of Minnesota

Theme - AI in Cosmology   *July 2024*

Gravitational-Wave Astronomy   International Center for Theoretical Sciences, TIFR

Theme - Gravitational Wave Astronomy   *July 2024*

Fifth IUCSS Summer School   Indiana University, Bloomington

Theme - Lorentz- and CPT-violating Standard-Model Extension   *May 2024*

Zwicky Transient Facility (ZTF) Summer School 2023   University of Minnesota

Theme - Transients   *July 2023*

CONFERENCES

Transients From Space   Space Telescope Science Institute (STScI)

Theme - Transients   *March 2025*

27th International Microlensing Conference   South African Astronomical Observatory

Theme - Microlensing   *January 2025*

Nancy Grace Roman Space Telescope Summer Conference 2023   NASA

Theme - Space Telescopes and Cosmic Exploration   *June 2023*

Gas Turbine Conference 2023   American Society of Mechanical Engineers

Theme - Gas Turbine and Renewables   *December 2023*

WORKSHOPS ATTENDED

Shaping the Future of TIME DOMAIN ASTRONOMY in the Rubin Era   TVS Science Collaboration LSST

Theme - Time Domain Astronomy   *May 2025*

Spectroscopy Calibration Workshop   Roman Wide Field Instrument Calibration Working Group

Theme - Observational Astronomy   *October 2024*

Statistics meets ML in Particle Physics and Astrophysics   PHYSTAT

Theme - ML & Astrophysics   *September 2024*

Rubin Community Workshop 2024   Legacy Survey of Space and Time

Theme - Rubin Science   *July 2024*

Second Intermediate Python for Astronomical Software Development   TVS Science Collaboration LSST

Theme - Git, Software Development   *July 2024*

Utrecht Workshop on Philosophy of Cosmic Inflation   Utrecht University

Theme - Philosophy of Astronomy and Cosmology   *May 2024*

LSST ToO Workshop 2024   Legacy Survey of Space and Time

Theme - Gravitational Waves, neutrinos, solar system object detection   *March 2024*

WORKSHOPS ORGANIZED

Fourth TVS Software Workshop   TVS Science Collaboration LSST

Theme - Science cases and practical aspects of using LSST data using Software   *March 2025*

Third Intermediate Python for Astronomical Software Development   TVS Science Collaboration LSST

Theme - Unit Testing, Github Actions, Code Profiling   *December 2024*

AI and Cosmology: Frontiers for the next decade 2024   ICSC, Ahmedabad University

Theme - AI and ML in Cosmology   *April 2024*

EXPERIENCE

Research Intern	May 2024 – Current
International Centre for Space and Cosmology, Ahmedabad University	*Gujarat, India*
Undergraduate Teaching Assistant	October 2023 – March 2024
Ahmedabad University	*Gujarat, India*
Summer Intern	May 2023 – July 2023
Physical Research Laboratory	*Gujarat, India*
Physics Journal Club Coordinator	June 2021 – June 2022
Ahmedabad University	*Gujarat, India*
Student Ambassador	June 2021 – January 2022
Ahmedabad University	*Gujarat, India*
Undergraduate Peer Tutor	August 2021 – December 2021
Ahmedabad University	*Gujarat, India*

INTERNATIONAL COLLABORATIONS

Member of The Roman Galactic Exoplanet Survey Project Infrastructure Team (RGES PIT)	March 2025 – Present
Member of Roman Wide Field Instrument Working Group	August 2024 – Present
Member of the LSST Transient and Variable Stars (TVS) Science Collaboration	July 2024 – Present
Member of the Cosmic Explorer Consortium	July 2024 – Present
Member of Rubin Undergraduate Network	July 2024 – Present

SUPERVISED FORMAL RESEARCH EXPERIENCE

Effect of Induction Heating on Temperature and Force Characteristics in Rotary Friction Welding	
Metallurgy and Mechanical Applications	December 2022 – December 2023
Implementation of Scheduling Algorithms	
Independent Project Course	July 2022 – June 2023
IoT-based Air Quality Sensor Network	
Atmospheric Physics	March 2022 – August 2022
Mechanical Model for Tracking the Optimized Foraging Pattern of Weakly Electric Fish Under Varying Conductivity	
Behavioral Ecology	January 2023 – May 2023

PUBLICATIONS

The CosmoVerse White Paper: Addressing observational tensions in cosmology with systematics and fundamental physics

Accepted in Physics of the Dark Universe

Retrograde Precession of Relativistic Orbits and the Quest for Charged Black Holes

Phys.Dark Univ. 48 (2025).101949

Rubin ToO 2024: Envisioning the Vera C. Rubin Observatory LSST Target of Opportunity program

Submitted to Astrophysical Journal Supplementary Series

Experimental Investigation of a Concentrated Photovoltaic System Integrated With Water Sprinkler Generating Electricity and Hot Water

ASME 2023 Gas Turbine India Conference (GTINDIA2023)

CERTIFICATIONS

- R Programming | *Coursera*

- Matlab Fundamentals | *MATLAB*

- Control Design Onramp | *MATLAB*

- Machine Learning Onramp | *MATLAB*

- Gravitational Wave Open Data Workshop 6 | *Gravitational Wave Open Science Center*

- Gravitational Wave Open Data Workshop 7 | *Gravitational Wave Open Science Center*

AWARDS AND HONORS

- Outstanding Performance and Impact on Community | *Ahmedabad University*

- Travel Grant by Ahmedabad University for presenting my research at the ASME Gas Turbine India Conference 2023

- Travel Grant by the Heising Simons Foundation for the Rubin ToO workshop 2024

VOLUNTEERISM

Khoj Museum | *Environment*   January 2021 – April 2021
- As a volunteer, I worked on ideas for sustainability under the domain of water conservation with the sub-domain of Technology and Innovation.
- I made a newsletter, came up with ideas for water sustenance, helped in developing a game based on water sustenance, came up with new technologies for water sustenance, and created activities for the same.

TECHNICAL SKILLS

Programming Languages: C/C++, Fortran, HTML/CSS, Java, JavaScript, Mathematica, Matlab, Python, R, Wolfram Language
Web and App Frameworks: Dash, FastAPI, Node.js, React, Streamlit
Developer Tools and Environments: CLion, conda, Docker, Figma, Git, GitHub, GitHub Actions, GitLab, GitLab CI, Jupyter Notebook, Make/CMake, Markdown, npm, Notion, pip, Prettier, PyCharm, Valgrind, Vite, Visual Studio, VS Code, Wireshark
Cloud Platforms and DevOps: Amazon Web Services (AWS), Google Cloud Platform (GCP), Microsoft Azure
Testing and Debugging: PyTest, Valgrind, Wireshark
HPC Tools and Libraries: Bash, CUDA, MPI, OpenMP, SLURM
Mechanical Workshop Tools: Bandsaws, Drilling Machines, Grinders, Lathes, Planers, Shapers, Table Saws
Machine Tools and Operations: Broaching Machines, CNC Machines, Hydraulic Presses, Milling Machines
Cutting and Forming Technologies: Forging, Laser Cutters, Plasma Cutters, Water Jet Cutters, Welding
Advanced Manufacturing Equipment: 3D Printers, Electro-Discharge Machines (EDM), Injection Molding Machines
Precision Grinding: Cylindrical Grinders, Surface Grinders
Mechanical CAD and Simulation Tools: Abaqus, ANSYS, Arduino, AutoCAD, Autodesk Inventor, CURA, Fusion 360, LabVIEW, LTspice, OpenFOAM, Simulink, SolidWorks, Tinkercad
Multimedia and Other Software: Audacity, Cakewalk, Canva, FLIR, FL Studio, Microsoft Excel, PuTTY, ToxTrac, Weights and Biases