Mansi Pachori

📍 **Home** : India

EDUCATION AND TRAINING

[2021 – 2024] **Bachelor of Science Honours**

Maharshi Dayanand Saraswati University Ajmer   www.mdsuajmer.ac.in

City: Ajmer │ │ **Final grade:** First class: Honours medalist

Relevant Courses: Inorganic chemistry, Organic chemistry, Physical chemistry, Instrumental methods of Analysis, Environmental chemistry, Industrial chemistry, Mechanics, Electromagnetism, Waves & Oscillations, Thermodynamics & statistical physics, Electronics, Optics, Quantum mechanics & spectroscopy, Solid state physics, Nuclear physics.

[2018 – 2020] **Senior School Certificate Examination**

St. Mary's Convent Sr Sec School   www.stmarysajmer.org

City: Ajmer │ │ **Final grade:** top 0.1% all over country

WORK EXPERIENCE

[01/2024 – Current] **Research Intern**

Central University, Rajasthan

City: Jaipur │ **Country:** India │ **Name of unit or department:** Computational Chemistry lab

- Working under the supervision of Dr. Rajagopala Reddy Seelam as a research intern.
- Currently tasked with molecular modelling and frequency optimisation of small systems.

[12/2024 – 01/2025] **Intern**

Space Technology & Aeronautical Rocketry

Country: India

- Collaborated with a team to enhance GMAT software for mission planning and trajectory design.
- Integrated models for chemical thrusters and tanks to improve simulations.
- Worked on astrodynamics and orbital space mechanics to optimize mission performance.

[10/2022 – 04/2024] **Teaching assistant**

Samrat Prithviraj Chouhan Government College, Ajmer

Country: India

- Assisted in preparing assignments and setting up laboratories and instrumentation.
- Guided junior students in understanding core concepts and conducting experiments.

[03/2022 – 05/2022] **Subject Matter Expert**

Chegg Inc

Country: India

- Assisted students in resolving subject-specific doubts and answering academic questions.
- Provided clear explanations to enhance student understanding and academic performance.

HONOURS AND AWARDS

Honours Medalist Awarding institution: Samrat Prithviraj Chauhan Government College Ajmer

First in Bachelor of Science Honours class

[2020] **Ritu Mathur Sethi Appreciation Award Awarding institution:** St. Mary's Convent Sr Sec School Ajmer

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| [2020] | **Inter-school Quiz Competition Awarding institution:** St Mary's Convent Sr Sec School Ajmer |

| [2019] | **Shri Martin Gilroy Inter-School Quiz Competition Awarding institution:** St Stephen's Sr Sec School Ajmer |

Won Champion trophy for two times in a row(2018, 2019)

PROJECTS

[11/2024 – 12/2024] **Modelling a neutron star**

- Developed a model of a neutron star, simulating mass and pressure profiles using RK4 numerical methods.
- Applied astrophysical principles, including hydrostatic equilibrium, to analyze the balance between gravitational forces and internal pressure.
- Focused on star properties, including its internal structure, pressure distribution, and overall dynamics.

[11/2024 – 12/2024] **Exoplanet detection using ML**

- Analyzed data from NASA's Kepler mission to identify exoplanets using nearest k-neighbors (k-NN) algorithm.
- Preprocessed data by cleaning, removing outliers, and fitting it for optimal algorithm performance.
- Conducted data plotting to visualize trends and validate detection results.
- Applied machine learning techniques to improve classification accuracy and streamline analysis.

DIGITAL SKILLS

My Digital Skills

Google Data Analytics Professional Certificate | programming: Python, MATLAB and SQL | ORCA, PySCF, Gaussian | Text processing (Word, LaTeX) | CSS/HTML/JS

CONFERENCES AND SEMINARS

[07/01/2025 – 31/01/2025] **START-2025**   IIRS-ISRO

[18/01/2025 – 19/01/2025] **Computational chemistry techniques workshop**   Ashoka University

[03/01/2025 – 07/01/2025] **AI/ML using Python workshop**   NIT-Kurukshetra

[29/05/2024 – 29/05/2024] **The objective and effects of value based education**   Department of Sociology, Govt college Gwalior

Presented paper in the one day national webinar sponsored by MP Higher education, Bhopal.

[27/01/2025 – 31/01/2025] **11th Virtual Winter School on Computational Chemistry**

VOLUNTEERING

[2023 – 2024] **Teaching**   SPCGCA Ajmer

Volunteered to teach poverty-stricken street children at the college campus after study hours

[2024 – Current] **Citizen Scientist**   Zooniverse

assisted in projects such as PULSARS, Einstein@home etc

LANGUAGE SKILLS

Mother tongue(s): Hindi

Other language(s):

English

LISTENING C1 **READING** C2 **WRITING** C1

SPOKEN PRODUCTION C1 **SPOKEN INTERACTION** C1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

Other language(s):

English

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SPOKEN PRODUCTION C1 **SPOKEN INTERACTION** C1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user