Tanmay Shah

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Summary

M.Sc. Physics student with strong background in **Physics, Machine Learning, and Data Analysis**. Experienced in interdisciplinary research and applied AI, with one project under review for publication. Skilled in Python, ML libraries, and research communication, with proven ability to design advanced problems and explain complex concepts clearly.

Projects

Joint International Project on Text Mining (Paper Under Review)   **Aug 2024 – Jun 2025**
– Applied transformer-based NLP models to analyze student feedback data.
– Used manifold learning and clustering to identify latent structures and patterns.
– Performed sentiment analysis on faculty clusters to extract behavioral insights.

ML-Enabled Driver Drowsiness and Risky Behaviour Detection | Coursework
National Institute of Technology, Jamshedpur   **Sept 2024 – Nov 2024**
– Developed Arduino-based system integrating physiological and motion sensors.
– Implemented ML algorithms for risk detection from real-time video and sensor data.

Spectral Data Analysis of Raman Spectrum of $MoSe_2$ | Coursework
Birla Institute of Technology, Mesra   **Jan 2024 – Apr 2024**
– Conducted Raman spectroscopic analysis of $MoSe_2$ to study vibrational modes and performed quantitative data analysis and statistical modeling using Python and Excel.
– Applied machine learning concepts to derive insights from unstructured datasets.
– Investigated data-driven optimization techniques for sustainable energy research (green hydrogen production).

Education

National Institute of Technology, Jamshedpur
Masters of Science in Physics | CGPA - 8.52   **Aug 2024 – Present**
Relevant Coursework: Data Analysis, Statistical Methods, Computational Physics, Machine Learning

Birla Institute of Technology, Mesra
Bachelors of Science (Hons) in Physics | CGPA - 8.14   **Dec 2021 – Apr 2024**
Relevant Coursework: Numerical Methods, Data Visualization, Programming in Python

Skills

- **Programming:** Python, MATLAB, SQL (basic), TensorFlow, Scikit-learn, NumPy, Pandas
- **Tools:** Excel, Power BI, Git, LaTeX
- **Core Competencies:** Data Analysis, Statistical Modeling, Business Intelligence, Machine Learning
- **Languages:** English, Hindi, French (Elementary)

Achievements

- Content Head, Environment Protection and Awareness Club, BIT Mesra – led data-backed campaign strategies improving student engagement by 30%
- National Service Scheme (NSS) Volunteer – coordinated community awareness and reporting initiatives
- National Rank Holder in JEE Mains, IIT-JAM, NSO and NCO
- Delivered seminar: *"Beyond the Two-Spot Story of Stern-Gerlach Experiment"* (graded A+)