

# VIPUL SINGH PARMAR

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## EDUCATION

**Bundelkhand University** - Jhansi, Uttar Pradesh

Sep 2024 - Aug 2026

Master of Computer Applications

*Relevant Coursework: AI/ML, Data Science Stats, Big Data Analytics, Probability, Discrete Mathematics*

**Bundelkhand University** - Jhansi, Uttar Pradesh

Sep 2021 - Aug 2024

Bachelor of Science in Mathematic

*Relevant Coursework: Calculus, Linear Algebra, Abstract Algebra, Real Analysis, Probability and Statistics, Mathematical Methods SGPA: 7.13*

## PROFESSIONAL EXPERIENCE

**Department Of Science Technology**

New Delhi

*Research Fellow—Hardware Development/Data Analysis*

Dec 2024 - May 2025

- Led data collection from gamers to identify key challenges, analyzing trends and providing actionable insights to inform hardware and firmware development.
- Actively leading the design and development of an innovative mechanical keyboard with QMK firmware, demonstrating proactive engagement in hardware innovation and the integration of customizable user programming.
- Successfully received and managed a 50,000 grant from DST-TEC, demonstrating the ability to secure funding for hardware innovation and effectively manage project budgets (consumables, travel, contingencies) in compliance with funding terms

**Nimbus Innovations**

Jhansi

*Junior Firmware Developer Intern*

June 2024 - Dec 2024

- Leading the design and development of high-performance gaming mice and custom keyboards for the Indian market.
- Developing firmware for gaming peripherals using QMK and Nordic nRF52840, ensuring top-quality user experiences.
- Achieved **3rd place** in the Sagar Hackathon during the Investor Summit, with recognition from the **CM of Madhya Pradesh**.

## SKILLS

**Programming Languages:** Python, MySQL, Rust, Embedded C, HTML, CSS

**Deep Learning & Machine Learning:** PyTorch, Transformers, Convolutional Neural Networks (CNNs), Scikit-learn, Keras

**Big Data & Machine Learning:** DBMS, Spark, Hadoop, MongoDB, Python (eg. scikit-learn, numpy, pandas, matplotlib)

**Data Science & Miscellaneous Technologies:** A/B testing, ETL, Data science pipeline (cleansing, wrangling, visualization, modeling, interpretation), Statistics, Time series, Experimental design, Hypothesis testing, OOP, OOD, APIs, Excel, Git, Power BI, Excel, PowerPoint, Word, VBA, Power Query

## PROJECTS

**House Price Prediction using Machine Learning**

*Tech Stack: Python, Scikit-learn, XGBoost, Streamlit*

Designed and optimized regression models (Random Forest, XGBoost) for house price prediction with RMSE improvement of 15%. Applied feature engineering (encoding, scaling, selection) to enhance model performance. Deployed an interactive web app using Streamlit for users to input features and predict prices.

**Customer Segmentation using Unsupervised Learning**

*Tech Stack: Python, Scikit-learn, K-Means, PCA*

Performed customer segmentation for a retail dataset using K-Means clustering. Reduced dimensionality with PCA to visualize customer clusters in 2D. Proposed targeted marketing strategies based on customer clusters.

**Heart Disease Risk Assessment Web Application**

*Tech Stack: Python, Flask, HTML, TailwindCSS, Azure*

Developed a machine learning-based application achieving 98.54% accuracy in heart disease prediction using Decision Tree Classifier algorithms and comparative model evaluation. Comprehensive data processing pipeline using NumPy, Pandas, and scikit-learn to analyze 13 clinical parameters and deliver instant cardiovascular risk predictions

## PUBLICATIONS

**Enhancing Preventative Cardiology Through Machine Learning** arXiv:2505.XXXXX [cs.LG], May 2025  
(In preparation for submission)

## AWARD

**Second Runner-Up** Bundelkhand Sagar Hackathon 2024

MPIDC Investor Summit

**Winner** Bundelkhand University Tech Hackathon 2024

Department Of Science Technology

**Winner** RISE/YIC Hackathon 2024

The Rani Lakshmibai Central Agricultural University

**Featured as a Young Student Entrepreneur** by Jagriti Jagran 2025

Dainik Jagran