# Himanshu Saini

AI & Machine Learning Enthusiast

## CONTACT

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## ABOUT ME

I am a 21-year-old AI and Machine Learning enthusiast with a solid academic foundation in Data Science and Applications, currently pursuing a BS at the Indian Institute of Technology, Madras. With a CGPA of 8.9, my studies have equipped me with advanced skills in machine learning, statistics, and programming. I have hands-on experience in building predictive models, hyperparameter tuning, and data preprocessing. My technical expertise extends across Python, Scikit-learn, SQL, and Java, developing web applications using Flask and designing REST APIs. I am passionate about applying data-driven insights to solve real-world problems and am continuously working on sharpening my skills to stay at the forefront of technological advancements.

## SKILLS

● **Scikit-Learn**

learnt Scikit-learn during my Machine Learning Practice subject achieving the best grade 'S'. My experience includes:
- Building predictive models for classification, regression, clustering, and dimensionality reduction.
- Hyperparameter tuning with GridSearchCV & RandomizedSearchCV.
- Evaluating model performance using cross-validation, precision, recall, ROC-AUC, and confusion matrices.
- Implementing data preprocessing techniques such as feature scaling, normalization, and one-hot encoding.
- Visualizing decision trees and feature importances to interpret models effectively.

● **Machine Learning Foundations & Techniques(MLF , MLT)**

I gained a strong foundation in machine learning during MLF and MLT Course. This Covers:
- Expertise in breaking down machine learning problems into fundamental concepts using tools from linear algebra, calculus, and probability.
- Experienced in solving optimization problems using gradient descent, constrained optimization, and Lagrange multipliers.
- Knowledgeable in both supervised (regression, classification) and unsupervised (clustering, dimensionality reduction) learning techniques, with hands-on application of algorithms like SVM, neural networks, and Gaussian mixture models.

● **Statistics for Data Science**

I gained experience during my Statistics for Data Science I & II Course. It encludes:
- Comprehensive knowledge of both descriptive and inferential statistics, including measures of central tendency, dispersion, and association between variables.
- Proficient in probability theory, covering random variables, binomial, Poisson, and normal distributions. Skilled in hypothesis testing, regression analysis, point and interval estimation, and Bayesian estimation for data-driven insights.

- **Mathematics for Data Science**

  I gained knowledge durning my Mathematics for Data Scienec I & II Course.
  - Developed strong expertise in matrix algebra, linear transformations, and optimization techniques.
  - Experienced in solving complex real-world problems through graph theory, leveraging algorithms like BFS, DFS, and minimum spanning trees.
  - Proficient in applying calculus to multivariable functions for finding extrema and optimizing solutions in machine learning tasks.

- **Python**

  - Proficient in Python programming, utilizing core concepts like loops, conditionals, and functions for problem-solving.
  - Experienced in working with Python collections (lists, tuples, dictionaries) and leveraging popular libraries such as Pandas, matplotlib, and scipy.
  - Skilled in writing efficient, readable code and building small applications to solve real-world problems.

- **Programming with Java**

  - Skilled in Java programming with a solid understanding of object-oriented concepts such as encapsulation, inheritance, and abstraction.
  - Proficient in handling exceptions, concurrent data access, and using collections and iterators.
  - Experienced in building efficient Java programs with a focus on scalability and error handling.

- **Flask and Rest API**

  - Developed web applications using Flask, connecting frontend with backend logic and MySQL databases.
  - Gained expertise in designing REST APIs for seamless communication between client and server, handling business logic, and ensuring application security and proper testing.

- **SQL & DataBase Management Systems**

  - In-depth knowledge of relational database models, SQL querying, and database design principles.
  - Expertise in functional dependency, normalization, transaction handling, and indexing. Proficient in backup/recovery, data warehousing, and query optimization techniques.

# EDUCATION

- **BS in Data Science and Applications (2022-Present)**

  Indian Institue of Technology, Madras
  Current CGPA - 8.9

- **11th-12th with Mathematics (2019-2020)**

  Prince Eduhub, Sikar(Rajasthan)
  12th State Board Score - 98.80%

- **10th (2018-2019)**

  L.B.S. International School, Shrimadhopur(Sikar, Rajasthan)
  10th State Board Score - 92.17%