

# Aditya Suman

Bangalore IN | +91 (886)-115-0142 | [Email](#) | Github | [Portfolio](#)

## SUMMARY

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Machine Learning Engineer specializing in building machine learning models, optimizing algorithms, and deploying end-to-end AI systems. Experienced in supervised and unsupervised learning, deep learning, and reinforcement learning. Experience in data preprocessing, feature engineering, model evaluation, and performance tuning. Applied solutions in predictive analytics, natural language processing, and automation across various domains. Proficient in Python, TensorFlow, PyTorch, scikit-learn, and cloud platforms.

## WORK EXPERIENCE

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### IEEE RAS - Junior Coordinator and Core Community 2023 - 2024

- Led hands-on training sessions on Arduino kits for 20+ freshmen, covering embedded C++, circuit design, and IoT basics.
- Simplified core electronics and sensor integration through interactive projects and live demos.
- Engineered a centralized event tracking and task delegation website using GitHub Pages, streamlining coordination across the IEEE RAS team and cutting down task completion time by approximately 2 days.

## KEY PROJECTS

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### Lunar Lander Simulation with Reinforcement Learning | Github

- Trained agents using Deep Q-Learning, Vanilla DQN, Rainbow DQN, and Monte Carlo methods.
- Reduced convergence time by 35% from 2000 to 1300 episodes using prioritized experience replay in Rainbow DQN.

### Heart Disease Prediction Using Genetic Algorithm For Feature selection | Github

- Developed a heart disease prediction system using Genetic Algorithms for optimal feature selection and evaluated performance across multiple machine learning models.
- Trained and fine-tuned models including Logistic Regression, Decision Tree, Random Forest, SVM, KNN, Gradient Boosting, XGBoost, AdaBoost, Naive Bayes, and MLP Neural Network.
- Applied GridSearchCV for hyperparameter optimization and used evaluation metrics including accuracy, precision, recall, F1 score, and AUC-ROC for comprehensive model comparison. visualized performance and feature importance to aid in model interpretation and clinical insight.
- Random Forest: Accuracy 94.96% , XGBoost: Accuracy 94.80%

### BERT Fine-Tuning for Sentiment Analysis | Github

- Fine-tuned a BERT model using PyTorch, achieving 80% accuracy, 0.82 precision, 0.78 recall, and an F1 score of 0.80 on the test set. Evaluated model using confusion matrix and tracked loss curves to monitor training stability

### Neural Networks Built From Scratch in c++ | Github

- Developed a custom neural network library from scratch in C++ with a focus on performance, modularity, and low-level understanding of deep learning fundamentals.
- Implemented key components including forward / backward propagation, gradient descent, and activation functions

### Building an Transformer using Pytorch | Github

- Built a Transformer model from the ground up using PyTorch, implementing components such as multi-head self-attention, positional encoding, and layer normalization.
- Designed both encoder and decoder stacks for sequence-to-sequence tasks like machine Translation.

### Mushroom Binary Classification Using Extreme Gradient Boosting | Github

- Built a binary classifier using XGBoost to predict whether a mushroom is edible or poisonous based on physical attributes.
- Tuned hyperparameters using GridSearchCV, optimizing for maximum accuracy and minimal overfitting.

## EDUCATION

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### Manipal university Jaipur

Bachelor's of science , Computer Science

2022-2026

cumulative GPA :7.24 / 10

### Delhi Public School BN

Senior Secondary CBSE (Physics, Chemistry, Math)

2020-2022

## COURSES

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Stanford machine learning specialization | [link](#)

Google Data Analytics specialization | [link](#)

Introduction To Quantum computing Nptel IIT Madras - center-based final exam passed with a Elite Score

Design and analysis of algorithm Nptel IIT Madras - center based final exam passed with a Elite Score