Manit Bhattarai

Machine Learning Engineer

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Summary

Aspiring **Machine Learning Engineer** with a strong foundation in **C++, Python, PostgreSQL, and MongoDB**. Passionate about applying **machine learning and computer vision** to solve real-world problems. Experienced in building **data-driven models**, optimizing algorithms, and developing **AI-powered applications**. Strong **analytical, problem-solving and collaborative skills**, with a keen interest in **competitive coding**.

Skills

- Machine Learning & AI: Computer Vision, Data Modeling, EDA, Feature Engineering
- Software Development: C++, Python, FastAPI, Git, GitHub
- Databases: PostgreSQL
- Visualization & Tools: Matplotlib, Seaborn, Pandas, NumPy
- Problem-Solving & Optimization: Algorithm Design, Data Structures
- Soft: Attention to detail, Problem solving, Adaptability, Time Management

Projects

MiniGPT – GPT-2 clone

- Machine Failure Prediction From Sensor Data
- Developed an end-to-end ML pipeline to predict equipment failures from 10,000+ industrial sensor records.
- Performed EDA and visualization to uncover patterns in torque, temperature, and tool wear linked to breakdowns.
- Engineered domain-specific features (temperature difference, mechanical power) to enhance model performance.
- Handled class imbalance with SMOTE and scaled features for robust training.
- Benchmarked multiple models; achieved 98.3% accuracy and F1 ≈ 0.98 with Random Forest.
- Delivered ROC/PR curves, confusion matrix, and feature importance analysis for explainability.
- Provided actionable insights for proactive maintenance scheduling, reducing downtime and safety risks.

California House Price Prediction

- Built a regression-based ML model using scikit-learn, achieving an R^2 score of 0.85 for real estate price prediction
- Worked with ~20,000 housing records from the California Census dataset.
- Handled missing values and encoded categorical features using Scikit-Learn transformers.
- Engineered 4+ new features (e.g., rooms_per_household, bedrooms_ratio) to boost model performance.
- Conducted EDA with 10+ visualizations to identify key correlations
- Built a full ML pipeline using Scikit-Learn's Pipeline and ColumnTransformer.
- Trained and compared 3 models: Linear Regression, Decision Tree, and Random Forest.
- Used 5-fold cross-validation and GridSearchCV to tune hyperparameters.
- Evaluated final model using RMSE on a separate test set.

Education

GH Raisoni College of Engineering, Nagpur **(2022–Present)**

BTECH in Computer Science Engineering (Cgpa: 8.9)
Key Courses: Operating System, Database Management, Computer Networks

Deerwalk Institute of Technology, Nepal **(2019-2021)**

Computer Science (Percentage: 84.5)

Certificates And Achievements

- Participated in Technex-25 Hackathon organized by St. Pallotti College.
- Acquired certifications for: RDBS PostgreSQL Training, Python Data Structures.