HEART FAILURE PREDICTION

Built with Streamlit | Powered by Machine Learning

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Project Overview

OBJECTIVE:

Develop a user-friendly web app to predict heart disease using patient data.

APPROACH:

- Build ML models to analyze medical data
- Visualize patterns and correlations
- Provide real-time predictions through an interactive dashboard

Dataset Overview

Source: UCI Heart Disease Dataset

Records: 918 entries

Features include:

- Age, Sex
- Chest Pain Type
- RestingBP, Cholesterol
- FastingBS, MaxHR
- ExerciseAngina, ST_Slope
- Target (Heart Disease: 0 = No, 1 = Yes)

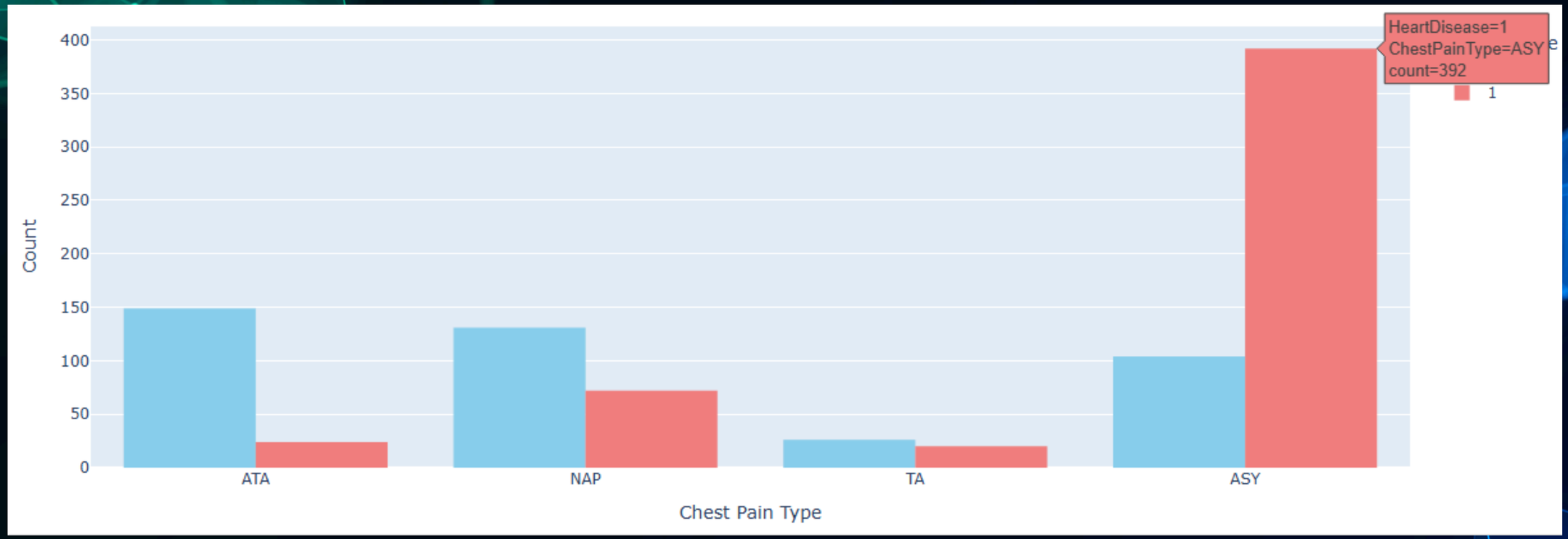
Features & Insights

VISUALIZATIONS INCLUDE:

- Age distribution
- Chest pain type vs heart disease
- Max heart rate analysis
- Fasting blood sugar impact
- Pairplot for correlation analysis

Features & Insights

CHEST PAIN TYPE VS HEART DISEASE



MACHINE LEARNING MODELS

Used multiple classification models:

- Logistic Regression
- Random Forest Classifier
- Support Vector Machine (SVM)
- Evaluation:
- Accuracy
- Recall
- Cross-validation
- Confusion matrix

STREAMLIT WEB APP

User Experience:

- Input health parameters through UI
- Get instant prediction result
- Red warning if disease is predicted
- Green success message if healthy

TOOLS & TECHNOLOGIES

Languages & Libraries:

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- Python, Pandas, NumPy
- Scikit-learn
- Seaborn, Matplotlib, Plotly
- Streamlit for UI
- Deployment: https://heart-failure-prediction-dashboard.streamlit.app

CONCLUSION

- Delivered a complete ML pipeline with real-time prediction
- Created engaging visualizations for data understanding
- Built and deployed an interactive dashboard accessible online

THANK YOU!

QUESTIONS?

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