AI Heart Attack Risk Predictor Report

SDG Problem Addressed

This project addresses Sustainable Development Goal (SDG) 3: Good Health and Well-being, which aims to reduce premature mortality from non-communicable diseases (NCDs), such as cardiovascular diseases, through early detection and prevention.

Heart disease remains one of the world's leading causes of death, yet many cases are preventable with timely interventions. This AI-based system enables early identification of heart attack risk, helping users and healthcare providers take action before critical events occur.

ML Approach Used

The predictor uses a Deep Neural Network (DNN) built with TensorFlow for binary classification of heart attack risk.

- Input: Age, blood pressure, cholesterol, heart rate, etc.

- Architecture: Dense (64)-Dropout (0.3)-Dense (32)-Dense (1) with ReLU and sigmoid activations

- Loss: Binary cross entropy | Optimizer: Adam | Metric: Accuracy

- Preprocessing: StandardScaler for feature normalization

- Training/Test Split: 80/20 using train_test_split

Results

- Accuracy: ~85–90%

- Output: Low or High heart attack risk

- Impact: Supports preventive screening and lifestyle awareness

- Users: Public, clinicians, fitness platforms

Ethical Considerations

- Bias: Needs diverse datasets to avoid demographic skew

- Privacy: Must comply with GDPR/HIPAA for user data

- Disclaimer: Clearly stated that it's not a medical diagnostic tool

- Transparency: Can integrate SHAP/LIME for explainability in future updates

Deployment

The model is live via Streamlet at: [AI heart attack risk predictor app](#)
Users can input health data and get real-time predictions. The app loads a trained .h5 model and. pkl scaler, offering global access with no installation.