Portfolio Optimization using LTSM and GBM

This project presents a comprehensive framework for **portfolio optimization** leveraging a combination of **machine learning**, **Geometric Brownian Motion** (GBM) simulations, and advanced financial modeling. By integrating **Long Short-Term Memory** (LSTM) networks for return predictions and portfolio optimization techniques, the framework demonstrates a dynamic and robust method to maximize returns while managing risk. The results are backtested using simulated market scenarios, highlighting the effectiveness of the proposed approach.

Case Scenario

Let us consider a portfolio of assets where the goal is to dynamically allocate weights based on two strategies:

1. **Momentum-based weighting:** Allocating portfolio weights proportional to predicted momentum signals.

   $$Optimal\ Weights = \frac{Momentum}{\sum Momentum}$$

   where $Momentum = max(daily\_predictions, 0)$

2. **Sharpe ratio optimization:** Falling back to weight optimization for maximizing the Sharpe ratio if no clear momentum signals are present.

   $$Sharpe\ Ratio = \frac{Portfolio\ Return - Riskfree\ rate}{Portfolio\ Volatility}$$

The evolution of the asset prices S_t^i follows the stochastic differential equation (SDE):

$$dS_t^i = \mu S_t^i\, dt + \sigma S_t^i\, dB_t.$$

With:

- μ: drift term of the underlying asset,
- σ_i: volatility of the asset,
- dB_t: increment of a Brownian motion.

The bank account follows $dS_t^0 = r S_t^0\, dt$; $S_0^0 = 1$

Our goal is to construct a portfolio allocation strategy using momentum predictions and Sharpe ratio optimization and analyze its performance under varying conditions.

We shall simulate the market by using the geometric Brownian motion as we have done beforehand in our various previous projects

Project Highlights

1. Data collection and processing

Historical market data for selected tickers [BSX, NVDA, AAPL, GOOGL, TSM] was collected using the yfinance library. The dataset includes closing prices, log returns, and volatility.

Preprocessing included scaling features using MinMaxScaler and preparing sequential data for the LSTM model.

2. Predictive Modeling

The LSTM model was implemented using TensorFlow, with the architecture comprising:

- **Input Layer**: Bidirectional LSTM (64 units)
- **Dropout**: Regularization (rate = 0.2)
- **Hidden Layer**: Bidirectional LSTM (32 units)
- **Output Layer**: Dense (1 unit, predicting next-day log return)

The model was trained on an 80/20 train-test split, using Mean Squared Error (MSE) as the loss function and Mean Absolute Error (MAE) as the evaluation metric.

3. Geometric Brownian Motion

Simulations for each ticker were conducted to generate synthetic price paths.

Parameters were estimated from historical data, and 1000 simulations were performed for each ticker over 252 trading days

4. Portfolio Optimization method

When momentum > 0: The code calculates weights proportional to the predicted momentum values. This approach emphasizes assets with higher momentum, aligning with the idea of buying strength and avoiding weakness.

When momentum ≤ 0: If all predicted momentum values are zero or negative, the code invokes a fallback method:

- It optimizes weights to maximize the Sharpe ratio under constraints:
    - The weights must sum to 1 (fully invested portfolio).
    - No short-selling is allowed (weights ≥ 0).

5. Notes

We will also attempt to track a 10K initial investment across time with this strategy.
We should take into consideration that this is only a simulation and not how the market might be in real-life

Code

```
import numpy as np
import pandas as pd
import yfinance as yf
from sklearn.preprocessing import MinMaxScaler
from tensorflow.keras.models import Model
from tensorflow.keras.layers import Input, LSTM, Dense, Bidirectional, Dropou
t
from scipy.optimize import minimize
import matplotlib.pyplot as plt


# Geometric Brownian Motion simulation
def simulate_gbm(S0, mu, sigma, T, steps, n_simulations):
    dt = T / steps
    simulations = np.zeros((n_simulations, steps + 1))
    simulations[:, 0] = S0
    for t in range(1, steps + 1):
        Z = np.random.normal(size=n_simulations)
        simulations[:, t] = simulations[:, t - 1] * np.exp((mu - 0.5 * sigma*
*2) * dt + sigma * np.sqrt(dt) * Z)
    return simulations


# Fetch and preprocess data
def fetch_data(tickers, start_date, end_date):
    data = {}
    for ticker in tickers:
        stock_data = yf.download(ticker, start=start_date, end=end_date)
        stock_data["Log_Return"] = np.log(stock_data["Close"] / stock_data["C
lose"].shift(1))
        stock_data["Volatility"] = stock_data["Log_Return"].rolling(30).std()
* np.sqrt(252)  # Annualized
        stock_data.dropna(inplace=True)
        data[ticker] = stock_data
    return data
```

```
# Sequence preparation for LSTM
def create_sequences(data, sequence_length=30):
    sequences, targets = [], []
    for i in range(len(data) - sequence_length):
        sequences.append(data.iloc[i:i+sequence_length].values)
        targets.append(data.iloc[i+sequence_length]["Log_Return"])
    return np.array(sequences), np.array(targets)

# Build the LSTM model
def build_lstm_model(input_shape):
    inputs = Input(shape=input_shape)
    x = Bidirectional(LSTM(64, return_sequences=True))(inputs)
    x = Dropout(0.2)(x)
    x = Bidirectional(LSTM(32))(x)
    outputs = Dense(1)(x)
    model = Model(inputs, outputs)
    model.compile(optimizer="adam", loss="mse", metrics=["mae"])
    return model

# Portfolio optimization function
def optimize_portfolio(returns, risk_free_rate=0.02):
    n_assets = returns.shape[0]

    def portfolio_sharpe(weights):
        portfolio_return = np.dot(weights, returns)
        portfolio_volatility = np.sqrt(np.dot(weights.T, np.dot(np.cov(return
s), weights)))
        return -(portfolio_return - risk_free_rate) / portfolio_volatility  #
Negative for minimization

    # Constraints: weights sum to 1, weights >= 0
    constraints = [{"type": "eq", "fun": lambda w: np.sum(w) - 1}]
    bounds = [(0, 1) for _ in range(n_assets)]

    # Initial guess: equal weights
```

```
    initial_weights = np.ones(n_assets) / n_assets


    # Minimize the negative Sharpe ratio
    result = minimize(portfolio_sharpe, initial_weights, constraints=constrai
nts, bounds=bounds)
    return result.x if result.success else initial_weights


def backtest_portfolio(data, predictions, tickers, simulations, risk_free_rat
e=0.02, rebalance_frequency=25, transaction_cost=0.0001):
    portfolio_returns, portfolio_volatility, portfolio_weights, sharpe_ratios
= [], [], [], []
    reshaped_predictions = predictions[:len(predictions) // len(tickers) * le
n(tickers)].reshape(-1, len(tickers))
    all_summaries = []  # To collect all the summary DataFrames
    previous_weights = None  # To track weights for transaction cost calculat
ion


    # Rebalance only every rebalance_frequency days
    for i in range(len(reshaped_predictions)):
        if i % rebalance_frequency == 0:  # Rebalance only every rebalance_fr
equency days
            daily_predictions = reshaped_predictions[i]
            momentum = np.maximum(daily_predictions, 0)
            optimal_weights = momentum / np.sum(momentum) if np.sum(momentum)
> 0 else optimize_portfolio(daily_predictions, risk_free_rate)


            # Apply transaction cost if weights have changed (i.e., rebalanci
ng occurred)
            if previous_weights is not None:
                transaction_costs = transaction_cost * np.sum(np.abs(optimal_
weights - previous_weights))
            else:
                transaction_costs = 0  # No transaction costs for the initial
allocation


            portfolio_weights.append(optimal_weights)
            previous_weights = optimal_weights
        else:
```

```
            # Maintain previous weights if not rebalancing
            optimal_weights = portfolio_weights[-1] if portfolio_weights else optimize_portfolio(daily_predictions, risk_free_rate)
            transaction_costs = 0  # No transaction costs on non-rebalancing days

        # Ensure we're not going beyond the simulation steps
        if i < simulations[tickers[0]].shape[1]:
            simulated_returns = [simulations[ticker][:, i].mean() / S0[ticker] for ticker in tickers]
            portfolio_return = np.dot(optimal_weights, simulated_returns) - transaction_costs
            portfolio_returns.append(portfolio_return)
            portfolio_volatility.append(np.std(simulated_returns))

            # Calculate Sharpe Ratio
            portfolio_volatility_current = np.std(simulated_returns)
            sharpe_ratio = (np.mean(simulated_returns) - risk_free_rate) / portfolio_volatility_current if portfolio_volatility_current != 0 else 0
            sharpe_ratios.append(sharpe_ratio)

            # Create a DataFrame to summarize the data for this period
            summary_data = {
                "Time": [i + 1],
                "Portfolio Return": [portfolio_return],
                "Portfolio Volatility": [np.std(simulated_returns)],
                "Sharpe Ratio": [sharpe_ratio]
            }

            # Add the weights of each stock to the summary
            for j, ticker in enumerate(tickers):
                summary_data[f"Weight in {ticker}"] = [optimal_weights[j]]

            # Append the DataFrame to the list
            all_summaries.append(pd.DataFrame(summary_data))
```

```
    # Concatenate all the DataFrames into a single DataFrame
    final_summary_df = pd.concat(all_summaries, ignore_index=True)

    return np.array(portfolio_returns), np.array(portfolio_volatility), portf
olio_weights, final_summary_df



# Main execution
tickers = ["BSX", "NVDA", "AAPL", "GOOGL", "TSM"]
data = fetch_data(tickers, "2015-04-22", "2024-12-18")
## [**********************100%***********************]  1 of 1 completed
## [**********************100%***********************]  1 of 1 completed
## [**********************100%***********************]  1 of 1 completed
## [**********************100%***********************]  1 of 1 completed
## [**********************100%***********************]  1 of 1 completed
# Preprocess data and prepare LSTM sequences
scaler = MinMaxScaler()
X, y = [], []
for ticker, df in data.items():
    scaled_features = scaler.fit_transform(df[["Log_Return", "Volatility"]])
    scaled_df = pd.DataFrame(scaled_features, columns=["Log_Return", "Volatil
ity"])
    seq_X, seq_y = create_sequences(scaled_df, sequence_length=30)
    X.append(seq_X)
    y.append(seq_y)

X = np.concatenate(X, axis=0)
y = np.concatenate(y, axis=0)

# Split data
train_size = int(len(X) * 0.8)
X_train, X_test = X[:train_size], X[train_size:]
y_train, y_test = y[:train_size], y[train_size:]

# Train LSTM model
```

```
model = build_lstm_model((X_train.shape[1], X_train.shape[2]))

model.fit(X_train, y_train, epochs=20, batch_size=32, validation_data=(X_test
, y_test))
```

```
## Epoch 1/20

##

## [1m  1/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m44:03[0m 9s/step
- loss: 0.2151 - mae: 0.4578

## [1m  3/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m7s[0m 26ms/step
- loss: 0.1714 - mae: 0.3956

## [1m  6/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23ms/step
- loss: 0.1291 - mae: 0.3212

## [1m  9/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22ms/step
- loss: 0.1087 - mae: 0.2867

## [1m 12/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22ms/step
- loss: 0.0949 - mae: 0.2611

## [1m 15/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22m
s/step - loss: 0.0847 - mae: 0.2410

## [1m 18/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22m
s/step - loss: 0.0770 - mae: 0.2258

## [1m 21/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0710 - mae: 0.2137

## [1m 24/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0659 - mae: 0.2032

## [1m 27/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0617 - mae: 0.1940

## [1m 30/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0581 - mae: 0.1861

## [1m 33/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0549 - mae: 0.1792

## [1m 36/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0522 - mae: 0.1730

## [1m 39/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0498 - mae: 0.1675

## [1m 42/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0477 - mae: 0.1626

## [1m 45/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0457 - mae: 0.1581

## [1m 48/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0440 - mae: 0.1541
```

```
## [1m 51/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0424 - mae: 0.1504

## [1m 54/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0410 - mae: 0.1469

## [1m 57/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0397 - mae: 0.1437

## [1m 60/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0385 - mae: 0.1408

## [1m 63/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0373 - mae: 0.1380

## [1m 66/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0363 - mae: 0.1355

## [1m 69/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0353 - mae: 0.1331

## [1m 72/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0344 - mae: 0.1308

## [1m 75/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0336 - mae: 0.1287

## [1m 78/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0328 - mae: 0.1267

## [1m 81/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0320 - mae: 0.1248

## [1m 84/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0313 - mae: 0.1230

## [1m 87/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0307 - mae: 0.1213

## [1m 90/297[0m [32m━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0300 - mae: 0.1197

## [1m 93/297[0m [32m━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0294 - mae: 0.1181

## [1m 96/297[0m [32m━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0289 - mae: 0.1167

## [1m 99/297[0m [32m━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0283 - mae: 0.1153

## [1m102/297[0m [32m━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0278 - mae: 0.1139

## [1m105/297[0m [32m━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0273 - mae: 0.1127

## [1m108/297[0m [32m━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0269 - mae: 0.1115
```

```
## [1m111/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0264 - mae: 0.1103

## [1m114/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0260 - mae: 0.1092

## [1m117/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0256 - mae: 0.1081

## [1m120/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0252 - mae: 0.1071

## [1m123/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0248 - mae: 0.1061

## [1m126/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0245 - mae: 0.1051

## [1m129/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0241 - mae: 0.1042

## [1m132/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0238 - mae: 0.1033

## [1m135/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0235 - mae: 0.1025

## [1m138/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0232 - mae: 0.1016

## [1m141/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0229 - mae: 0.1008

## [1m144/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0226 - mae: 0.1001

## [1m147/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0223 - mae: 0.0993

## [1m150/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0220 - mae: 0.0986

## [1m153/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0218 - mae: 0.0979

## [1m156/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0215 - mae: 0.0972

## [1m159/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0213 - mae: 0.0965

## [1m162/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0211 - mae: 0.0959

## [1m165/297[0m [32m━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0208 - mae: 0.0953

## [1m168/297[0m [32m━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0206 - mae: 0.0947
```

```
## [1m171/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0204 - mae: 0.0941

## [1m174/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0202 - mae: 0.0935

## [1m177/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0200 - mae: 0.0930

## [1m180/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0198 - mae: 0.0924

## [1m183/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0196 - mae: 0.0919

## [1m186/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0194 - mae: 0.0914

## [1m189/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0192 - mae: 0.0909

## [1m192/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0191 - mae: 0.0904

## [1m195/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0189 - mae: 0.0900

## [1m198/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0187 - mae: 0.0895

## [1m201/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0186 - mae: 0.0891

## [1m204/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0184 - mae: 0.0886

## [1m207/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0183 - mae: 0.0882

## [1m210/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0181 - mae: 0.0878

## [1m213/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0180 - mae: 0.0874

## [1m216/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0178 - mae: 0.0870

## [1m219/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0177 - mae: 0.0866

## [1m222/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0176 - mae: 0.0863

## [1m225/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0174 - mae: 0.0859

## [1m228/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0173 - mae: 0.0855
```

```
## [1m231/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0172 - mae: 0.0852

## [1m234/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0170 - mae: 0.0849

## [1m237/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0169 - mae: 0.0845

## [1m240/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0168 - mae: 0.0842

## [1m243/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0167 - mae: 0.0839

## [1m246/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0166 - mae: 0.0836

## [1m249/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0165 - mae: 0.0833

## [1m252/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0164 - mae: 0.0830

## [1m255/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0163 - mae: 0.0827

## [1m258/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0162 - mae: 0.0824

## [1m261/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0160 - mae: 0.0821

## [1m264/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0160 - mae: 0.0818

## [1m267/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0159 - mae: 0.0816

## [1m270/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0158 - mae: 0.0813

## [1m273/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0157 - mae: 0.0810

## [1m276/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0156 - mae: 0.0808

## [1m279/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0155 - mae: 0.0805

## [1m282/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0154 - mae: 0.0803

## [1m285/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0153 - mae: 0.0800

## [1m288/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0152 - mae: 0.0798
```

```
## [1m291/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 21m
s/step - loss: 0.0151 - mae: 0.0796

## [1m294/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 21m
s/step - loss: 0.0151 - mae: 0.0793

## [1m297/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m[0m [1m0s[0m 21m
s/step - loss: 0.0150 - mae: 0.0791

## [1m297/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m[0m [1m17s[0m 28
ms/step - loss: 0.0149 - mae: 0.0790 - val_loss: 0.0063 - val_mae: 0.0583

## Epoch 2/20

##

## [1m  1/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m36s[0m 123ms/ste
p - loss: 0.0028 - mae: 0.0402

## [1m  3/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m10s[0m 35ms/step
- loss: 0.0041 - mae: 0.0437

## [1m  6/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m7s[0m 27ms/step
- loss: 0.0043 - mae: 0.0436

## [1m  9/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 24ms/step
- loss: 0.0044 - mae: 0.0445

## [1m 12/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23ms/step
- loss: 0.0044 - mae: 0.0451

## [1m 15/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22m
s/step - loss: 0.0045 - mae: 0.0456

## [1m 18/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22m
s/step - loss: 0.0046 - mae: 0.0459

## [1m 21/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22m
s/step - loss: 0.0047 - mae: 0.0462

## [1m 24/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0047 - mae: 0.0465

## [1m 27/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0047 - mae: 0.0467

## [1m 30/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0047 - mae: 0.0470

## [1m 33/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0048 - mae: 0.0472

## [1m 36/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0048 - mae: 0.0475

## [1m 39/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0048 - mae: 0.0477

## [1m 42/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0049 - mae: 0.0479
```

```
## [1m 45/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0049 - mae: 0.0481

## [1m 48/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0049 - mae: 0.0483

## [1m 51/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0049 - mae: 0.0485

## [1m 54/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0049 - mae: 0.0486

## [1m 57/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0050 - mae: 0.0488

## [1m 60/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0050 - mae: 0.0489

## [1m 63/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0490

## [1m 66/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0491

## [1m 69/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0492

## [1m 72/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0492

## [1m 75/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0493

## [1m 78/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0494

## [1m 81/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0495

## [1m 84/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0495

## [1m 87/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0496

## [1m 90/297[0m [32m━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0496

## [1m 93/297[0m [32m━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0496

## [1m 96/297[0m [32m━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0497

## [1m 99/297[0m [32m━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0497

## [1m102/297[0m [32m━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0497
```

```
## [1m105/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0497

## [1m108/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0050 - mae: 0.0497

## [1m111/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0050 - mae: 0.0497

## [1m114/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0050 - mae: 0.0498

## [1m117/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0050 - mae: 0.0498

## [1m120/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0050 - mae: 0.0498

## [1m123/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0050 - mae: 0.0498

## [1m126/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0050 - mae: 0.0498

## [1m129/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0050 - mae: 0.0498

## [1m132/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0050 - mae: 0.0498

## [1m135/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0050 - mae: 0.0498

## [1m138/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0050 - mae: 0.0499

## [1m141/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0050 - mae: 0.0499

## [1m144/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0050 - mae: 0.0499

## [1m147/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0050 - mae: 0.0499

## [1m150/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0050 - mae: 0.0499

## [1m153/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0050 - mae: 0.0499

## [1m156/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0050 - mae: 0.0499

## [1m159/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0050 - mae: 0.0499

## [1m162/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0050 - mae: 0.0499
```

```
## [1m165/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m168/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m171/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m174/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m177/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m180/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m183/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m186/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m189/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m192/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m195/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m198/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m201/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m204/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m207/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m210/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m213/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m216/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m219/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m222/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500
```

```
## [1m225/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m228/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m231/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m234/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m237/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m240/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m243/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m246/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m249/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m252/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m255/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m258/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m261/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m264/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m267/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m270/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m273/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0501

## [1m276/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0501

## [1m279/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0501

## [1m282/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0501
```

```
## [1m285/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0501

## [1m288/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0501

## [1m291/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0501

## [1m294/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0501

## [1m297/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0501

## [1m297/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m[0m [1m7s[0m 24m
s/step - loss: 0.0050 - mae: 0.0501 - val_loss: 0.0059 - val_mae: 0.0556

## Epoch 3/20

##

## [1m  1/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m30s[0m 105ms/ste
p - loss: 0.0078 - mae: 0.0670

## [1m  3/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m9s[0m 33ms/step
- loss: 0.0064 - mae: 0.0585

## [1m  6/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m7s[0m 26ms/step
- loss: 0.0057 - mae: 0.0550

## [1m  9/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 24ms/step
- loss: 0.0054 - mae: 0.0537

## [1m 12/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23ms/step
- loss: 0.0051 - mae: 0.0529

## [1m 15/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22m
s/step - loss: 0.0050 - mae: 0.0520

## [1m 18/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22m
s/step - loss: 0.0048 - mae: 0.0512

## [1m 21/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22m
s/step - loss: 0.0048 - mae: 0.0508

## [1m 24/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22m
s/step - loss: 0.0048 - mae: 0.0505

## [1m 27/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0047 - mae: 0.0503

## [1m 30/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0047 - mae: 0.0500

## [1m 33/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0047 - mae: 0.0498

## [1m 36/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0047 - mae: 0.0497
```

```
## [1m 39/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0047 - mae: 0.0495

## [1m 42/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0047 - mae: 0.0494

## [1m 45/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0047 - mae: 0.0493

## [1m 48/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0047 - mae: 0.0492

## [1m 51/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0047 - mae: 0.0491

## [1m 54/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0047 - mae: 0.0491

## [1m 57/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0047 - mae: 0.0490

## [1m 60/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0047 - mae: 0.0490

## [1m 63/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0047 - mae: 0.0489

## [1m 66/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0047 - mae: 0.0489

## [1m 69/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0047 - mae: 0.0489

## [1m 72/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0047 - mae: 0.0489

## [1m 75/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0047 - mae: 0.0489

## [1m 78/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0047 - mae: 0.0489

## [1m 81/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0047 - mae: 0.0489

## [1m 84/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0048 - mae: 0.0489

## [1m 87/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0048 - mae: 0.0489

## [1m 90/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0048 - mae: 0.0489

## [1m 93/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0048 - mae: 0.0489

## [1m 96/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0048 - mae: 0.0489
```

```
## [1m 99/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0048 - mae: 0.0489

## [1m102/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0048 - mae: 0.0489

## [1m105/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0048 - mae: 0.0489

## [1m108/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 20m
s/step - loss: 0.0048 - mae: 0.0490

## [1m111/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 20m
s/step - loss: 0.0048 - mae: 0.0490

## [1m114/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 20m
s/step - loss: 0.0048 - mae: 0.0490

## [1m117/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 20m
s/step - loss: 0.0048 - mae: 0.0490

## [1m120/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 20m
s/step - loss: 0.0048 - mae: 0.0490

## [1m123/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 20m
s/step - loss: 0.0048 - mae: 0.0490

## [1m126/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 20m
s/step - loss: 0.0048 - mae: 0.0491

## [1m129/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 20m
s/step - loss: 0.0048 - mae: 0.0491

## [1m132/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 20m
s/step - loss: 0.0048 - mae: 0.0491

## [1m135/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 20m
s/step - loss: 0.0048 - mae: 0.0491

## [1m138/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 20m
s/step - loss: 0.0048 - mae: 0.0491

## [1m141/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 20m
s/step - loss: 0.0048 - mae: 0.0491

## [1m144/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 20m
s/step - loss: 0.0048 - mae: 0.0491

## [1m147/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 20m
s/step - loss: 0.0049 - mae: 0.0492

## [1m150/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0049 - mae: 0.0492

## [1m153/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0049 - mae: 0.0492

## [1m156/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0049 - mae: 0.0492
```

```
## [1m159/297[0m [32m━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0049 - mae: 0.0492

## [1m162/297[0m [32m━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0049 - mae: 0.0492

## [1m165/297[0m [32m━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0049 - mae: 0.0492

## [1m168/297[0m [32m━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0049 - mae: 0.0492

## [1m171/297[0m [32m━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0049 - mae: 0.0492

## [1m174/297[0m [32m━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0049 - mae: 0.0492

## [1m177/297[0m [32m━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0049 - mae: 0.0493

## [1m180/297[0m [32m━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0049 - mae: 0.0493

## [1m183/297[0m [32m━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0049 - mae: 0.0493

## [1m186/297[0m [32m━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0049 - mae: 0.0493

## [1m189/297[0m [32m━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0049 - mae: 0.0493

## [1m192/297[0m [32m━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0049 - mae: 0.0493

## [1m195/297[0m [32m━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0049 - mae: 0.0493

## [1m198/297[0m [32m━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0049 - mae: 0.0493

## [1m201/297[0m [32m━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0049 - mae: 0.0493

## [1m204/297[0m [32m━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0049 - mae: 0.0493

## [1m207/297[0m [32m━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0049 - mae: 0.0493

## [1m210/297[0m [32m━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0049 - mae: 0.0493

## [1m213/297[0m [32m━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0049 - mae: 0.0493

## [1m216/297[0m [32m━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0049 - mae: 0.0493
```

```
## [1m219/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0049 - mae: 0.0493

## [1m222/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0049 - mae: 0.0493

## [1m225/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0049 - mae: 0.0493

## [1m228/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0049 - mae: 0.0493

## [1m231/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0049 - mae: 0.0493

## [1m234/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0049 - mae: 0.0493

## [1m237/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0049 - mae: 0.0493

## [1m240/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0049 - mae: 0.0493

## [1m243/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0049 - mae: 0.0493

## [1m246/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0049 - mae: 0.0493

## [1m249/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0049 - mae: 0.0493

## [1m252/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0049 - mae: 0.0493

## [1m255/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0049 - mae: 0.0493

## [1m258/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0049 - mae: 0.0493

## [1m261/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0049 - mae: 0.0493

## [1m264/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0049 - mae: 0.0493

## [1m267/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0049 - mae: 0.0493

## [1m270/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0049 - mae: 0.0494

## [1m273/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0049 - mae: 0.0494

## [1m276/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0049 - mae: 0.0494
```

```
## [1m279/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 20m
s/step - loss: 0.0049 - mae: 0.0494

## [1m282/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 20m
s/step - loss: 0.0049 - mae: 0.0494

## [1m285/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━[0m [1m0s[0m 20m
s/step - loss: 0.0049 - mae: 0.0494

## [1m288/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━[0m [1m0s[0m 20m
s/step - loss: 0.0049 - mae: 0.0494

## [1m291/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━[0m [1m0s[0m 20m
s/step - loss: 0.0049 - mae: 0.0494

## [1m294/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━[0m [1m0s[0m 20m
s/step - loss: 0.0049 - mae: 0.0494

## [1m297/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m[0m [1m0s[0m 20m
s/step - loss: 0.0049 - mae: 0.0494

## [1m297/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m[0m [1m7s[0m 24m
s/step - loss: 0.0049 - mae: 0.0494 - val_loss: 0.0061 - val_mae: 0.0573

## Epoch 4/20

##

## [1m  1/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m17s[0m 58ms/step
- loss: 0.0060 - mae: 0.0587

## [1m  3/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m7s[0m 25ms/step
- loss: 0.0049 - mae: 0.0516

## [1m  5/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m8s[0m 29ms/step
- loss: 0.0043 - mae: 0.0477

## [1m  8/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m7s[0m 26ms/step
- loss: 0.0040 - mae: 0.0455

## [1m 11/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m7s[0m 25ms/step
- loss: 0.0038 - mae: 0.0446

## [1m 14/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 24ms/step
- loss: 0.0040 - mae: 0.0448

## [1m 17/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23m
s/step - loss: 0.0041 - mae: 0.0453

## [1m 20/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23m
s/step - loss: 0.0043 - mae: 0.0457

## [1m 23/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23m
s/step - loss: 0.0043 - mae: 0.0462

## [1m 26/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23m
s/step - loss: 0.0044 - mae: 0.0466

## [1m 29/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23m
s/step - loss: 0.0044 - mae: 0.0468
```

```
## [1m 32/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0045 - mae: 0.0470

## [1m 35/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0045 - mae: 0.0471

## [1m 38/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0045 - mae: 0.0472

## [1m 41/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0045 - mae: 0.0473

## [1m 44/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0045 - mae: 0.0474

## [1m 47/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0045 - mae: 0.0475

## [1m 50/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0046 - mae: 0.0476

## [1m 53/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0046 - mae: 0.0477

## [1m 56/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0046 - mae: 0.0478

## [1m 59/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0046 - mae: 0.0479

## [1m 62/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0046 - mae: 0.0479

## [1m 65/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0046 - mae: 0.0480

## [1m 68/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 22m
s/step - loss: 0.0046 - mae: 0.0481

## [1m 71/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 22m
s/step - loss: 0.0046 - mae: 0.0482

## [1m 74/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 22m
s/step - loss: 0.0046 - mae: 0.0482

## [1m 77/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 22m
s/step - loss: 0.0047 - mae: 0.0483

## [1m 80/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0047 - mae: 0.0483

## [1m 83/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0047 - mae: 0.0484

## [1m 86/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0047 - mae: 0.0484

## [1m 89/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0047 - mae: 0.0485
```

```
## [1m 92/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0047 - mae: 0.0485

## [1m 95/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0047 - mae: 0.0485

## [1m 98/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0047 - mae: 0.0486

## [1m101/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0047 - mae: 0.0486

## [1m104/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0047 - mae: 0.0486

## [1m107/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0047 - mae: 0.0486

## [1m110/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0047 - mae: 0.0487

## [1m113/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0047 - mae: 0.0487

## [1m116/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0047 - mae: 0.0487

## [1m119/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0047 - mae: 0.0487

## [1m122/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0047 - mae: 0.0487

## [1m125/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0047 - mae: 0.0488

## [1m128/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0047 - mae: 0.0488

## [1m131/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0047 - mae: 0.0488

## [1m134/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0047 - mae: 0.0488

## [1m137/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0047 - mae: 0.0488

## [1m140/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0047 - mae: 0.0488

## [1m143/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0047 - mae: 0.0488

## [1m146/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0047 - mae: 0.0489

## [1m149/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0047 - mae: 0.0489
```

```
## [1m152/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0047 - mae: 0.0489

## [1m155/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0047 - mae: 0.0489

## [1m158/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0047 - mae: 0.0489

## [1m161/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0047 - mae: 0.0489

## [1m164/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0047 - mae: 0.0489

## [1m167/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0047 - mae: 0.0490

## [1m170/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0047 - mae: 0.0490

## [1m173/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0047 - mae: 0.0490

## [1m176/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0047 - mae: 0.0490

## [1m179/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0047 - mae: 0.0490

## [1m182/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0047 - mae: 0.0490

## [1m185/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0047 - mae: 0.0490

## [1m188/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0047 - mae: 0.0490

## [1m191/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0047 - mae: 0.0490

## [1m194/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0047 - mae: 0.0490

## [1m197/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0047 - mae: 0.0490

## [1m200/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0047 - mae: 0.0490

## [1m203/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0047 - mae: 0.0490

## [1m206/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0047 - mae: 0.0490

## [1m209/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0047 - mae: 0.0490
```

```
## [1m212/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0047 - mae: 0.0490

## [1m215/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0047 - mae: 0.0490

## [1m218/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0047 - mae: 0.0491

## [1m221/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0491

## [1m224/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0491

## [1m227/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0491

## [1m230/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0491

## [1m233/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0491

## [1m236/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0491

## [1m239/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0491

## [1m242/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0491

## [1m245/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0492

## [1m248/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0492

## [1m251/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0492

## [1m254/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0492

## [1m257/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0492

## [1m260/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0492

## [1m263/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0492

## [1m266/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0492

## [1m269/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0492
```

```
## [1m272/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m275/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m278/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m281/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m284/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m287/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m290/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m293/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m296/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m297/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m[0m [1m7s[0m 24m
s/step - loss: 0.0048 - mae: 0.0493 - val_loss: 0.0063 - val_mae: 0.0584

## Epoch 5/20

##

## [1m  1/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m30s[0m 103ms/ste
p - loss: 0.0043 - mae: 0.0468

## [1m  3/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m11s[0m 40ms/step
- loss: 0.0055 - mae: 0.0508

## [1m  6/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m8s[0m 29ms/step
- loss: 0.0057 - mae: 0.0513

## [1m  9/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m7s[0m 26ms/step
- loss: 0.0058 - mae: 0.0519

## [1m 12/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m7s[0m 25ms/step
- loss: 0.0058 - mae: 0.0521

## [1m 15/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 24m
s/step - loss: 0.0058 - mae: 0.0522

## [1m 18/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23m
s/step - loss: 0.0058 - mae: 0.0522

## [1m 21/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23m
s/step - loss: 0.0058 - mae: 0.0522

## [1m 24/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23m
s/step - loss: 0.0058 - mae: 0.0521
```

```
## [1m 27/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22m
s/step - loss: 0.0057 - mae: 0.0521

## [1m 30/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0057 - mae: 0.0519

## [1m 33/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0056 - mae: 0.0518

## [1m 36/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0056 - mae: 0.0517

## [1m 39/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0055 - mae: 0.0516

## [1m 42/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0055 - mae: 0.0516

## [1m 45/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0055 - mae: 0.0515

## [1m 48/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0054 - mae: 0.0514

## [1m 51/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0054 - mae: 0.0513

## [1m 54/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0053 - mae: 0.0512

## [1m 57/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0053 - mae: 0.0511

## [1m 60/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0053 - mae: 0.0510

## [1m 63/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0053 - mae: 0.0509

## [1m 66/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0508

## [1m 69/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0508

## [1m 72/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0507

## [1m 75/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0507

## [1m 78/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0507

## [1m 81/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0506

## [1m 84/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0506
```

```
## [1m 87/297[0m [32m━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0505

## [1m 90/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0505

## [1m 93/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0051 - mae: 0.0505

## [1m 96/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0051 - mae: 0.0504

## [1m 99/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0051 - mae: 0.0504

## [1m102/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0051 - mae: 0.0504

## [1m105/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m108/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m111/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m114/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m117/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m120/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0051 - mae: 0.0502

## [1m123/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0051 - mae: 0.0502

## [1m126/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0051 - mae: 0.0502

## [1m129/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0051 - mae: 0.0502

## [1m132/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m135/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m138/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m141/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m144/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503
```

```
## [1m147/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m150/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m153/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m156/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m159/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m162/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m164/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m167/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m170/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m173/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m176/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m179/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m182/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m185/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m188/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m191/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m194/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m197/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m200/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m203/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503
```

```
## [1m206/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m209/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m212/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m215/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m218/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m221/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m224/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m227/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m230/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m233/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m236/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m239/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m242/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m245/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m248/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0502

## [1m251/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0051 - mae: 0.0502

## [1m254/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0051 - mae: 0.0502

## [1m257/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0502

## [1m260/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0502

## [1m263/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0502
```

```
## [1m266/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0502

## [1m269/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0502

## [1m272/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0502

## [1m275/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0502

## [1m278/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0502

## [1m281/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0502

## [1m284/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0502

## [1m287/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0502

## [1m290/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0502

## [1m293/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0502

## [1m296/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0502

## [1m297/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m[0m [1m7s[0m 25m
s/step - loss: 0.0050 - mae: 0.0502 - val_loss: 0.0059 - val_mae: 0.0561

## Epoch 6/20

##

## [1m  1/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m34s[0m 116ms/ste
p - loss: 0.0034 - mae: 0.0445

## [1m  2/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m15s[0m 52ms/step
- loss: 0.0033 - mae: 0.0446

## [1m  4/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m9s[0m 34ms/step
- loss: 0.0044 - mae: 0.0481

## [1m  7/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m8s[0m 28ms/step
- loss: 0.0049 - mae: 0.0501

## [1m 10/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m7s[0m 25ms/step
- loss: 0.0050 - mae: 0.0508

## [1m 13/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 24ms/step
- loss: 0.0050 - mae: 0.0513

## [1m 16/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 24m
s/step - loss: 0.0051 - mae: 0.0516
```

```
## [1m 19/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23m
s/step - loss: 0.0051 - mae: 0.0517

## [1m 22/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23m
s/step - loss: 0.0051 - mae: 0.0516

## [1m 25/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22m
s/step - loss: 0.0051 - mae: 0.0515

## [1m 28/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0052 - mae: 0.0514

## [1m 31/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0052 - mae: 0.0513

## [1m 34/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0051 - mae: 0.0511

## [1m 37/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0051 - mae: 0.0509

## [1m 40/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0051 - mae: 0.0507

## [1m 43/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0051 - mae: 0.0506

## [1m 46/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0051 - mae: 0.0505

## [1m 49/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0051 - mae: 0.0504

## [1m 52/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0051 - mae: 0.0503

## [1m 55/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0051 - mae: 0.0502

## [1m 58/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0050 - mae: 0.0501

## [1m 61/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m 64/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m 67/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0499

## [1m 70/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0499

## [1m 73/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0498

## [1m 76/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0498
```

```
## [1m 79/297[0m [32m━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0498

## [1m 82/297[0m [32m━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0497

## [1m 85/297[0m [32m━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0497

## [1m 88/297[0m [32m━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0497

## [1m 91/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0497

## [1m 94/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0496

## [1m 97/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0496

## [1m100/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0049 - mae: 0.0496

## [1m103/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0049 - mae: 0.0496

## [1m106/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0049 - mae: 0.0496

## [1m109/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0495

## [1m112/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0495

## [1m115/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0495

## [1m118/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0495

## [1m121/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0495

## [1m124/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0495

## [1m127/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0494

## [1m130/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0494

## [1m133/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0494

## [1m136/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0494
```

```
## [1m139/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0494

## [1m142/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0494

## [1m145/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0494

## [1m148/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0494

## [1m151/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m154/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m157/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m160/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m163/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m166/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m169/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m172/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m175/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m178/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m181/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m184/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m187/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m190/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m193/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m196/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493
```

```
## [1m199/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m202/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m205/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m208/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m211/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m214/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m217/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m220/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m223/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m226/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m229/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m232/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m235/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m238/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m241/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m244/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m247/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m250/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m253/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m256/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493
```

```
## [1m259/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m262/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m265/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m268/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m271/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m274/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m277/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m280/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m283/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m286/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m289/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m292/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m295/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m297/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m[0m [1m7s[0m 25m
s/step - loss: 0.0048 - mae: 0.0494 - val_loss: 0.0060 - val_mae: 0.0574

## Epoch 7/20

##

## [1m  1/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m43s[0m 146ms/ste
p - loss: 0.0029 - mae: 0.0393

## [1m  3/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m11s[0m 39ms/step
- loss: 0.0047 - mae: 0.0478

## [1m  6/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m8s[0m 29ms/step
- loss: 0.0060 - mae: 0.0519

## [1m  9/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m7s[0m 25ms/step
- loss: 0.0062 - mae: 0.0531

## [1m 12/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 24ms/step
- loss: 0.0061 - mae: 0.0529
```

```
## [1m 15/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23m
s/step - loss: 0.0060 - mae: 0.0526

## [1m 18/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23m
s/step - loss: 0.0059 - mae: 0.0522

## [1m 21/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23m
s/step - loss: 0.0058 - mae: 0.0521

## [1m 24/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22m
s/step - loss: 0.0057 - mae: 0.0520

## [1m 27/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0057 - mae: 0.0518

## [1m 30/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0056 - mae: 0.0516

## [1m 33/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0055 - mae: 0.0514

## [1m 36/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0055 - mae: 0.0513

## [1m 39/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0054 - mae: 0.0512

## [1m 42/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0054 - mae: 0.0512

## [1m 45/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0053 - mae: 0.0511

## [1m 48/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0053 - mae: 0.0510

## [1m 51/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0053 - mae: 0.0509

## [1m 54/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0053 - mae: 0.0508

## [1m 57/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0053 - mae: 0.0508

## [1m 60/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0053 - mae: 0.0508

## [1m 63/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0053 - mae: 0.0508

## [1m 66/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0053 - mae: 0.0507

## [1m 69/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0507

## [1m 72/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0507
```

```
## [1m 75/297[0m [32m━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0507

## [1m 78/297[0m [32m━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0506

## [1m 81/297[0m [32m━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0506

## [1m 84/297[0m [32m━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0506

## [1m 87/297[0m [32m━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0506

## [1m 90/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0506

## [1m 93/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0506

## [1m 96/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0506

## [1m 99/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0506

## [1m102/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0506

## [1m105/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0506

## [1m108/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0506

## [1m111/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0506

## [1m114/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0506

## [1m117/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0506

## [1m120/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0506

## [1m123/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0506

## [1m126/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0506

## [1m129/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0506

## [1m132/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0506
```

```
## [1m135/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0506

## [1m138/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0506

## [1m141/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0505

## [1m144/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0505

## [1m147/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0505

## [1m150/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0505

## [1m153/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0052 - mae: 0.0505

## [1m156/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0052 - mae: 0.0505

## [1m159/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0052 - mae: 0.0505

## [1m162/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0052 - mae: 0.0505

## [1m165/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0052 - mae: 0.0504

## [1m168/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0052 - mae: 0.0504

## [1m171/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0052 - mae: 0.0504

## [1m174/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0052 - mae: 0.0504

## [1m177/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0052 - mae: 0.0504

## [1m180/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0052 - mae: 0.0504

## [1m183/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0052 - mae: 0.0504

## [1m186/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0052 - mae: 0.0503

## [1m189/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0052 - mae: 0.0503

## [1m192/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0052 - mae: 0.0503
```

```
## [1m195/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0052 - mae: 0.0503

## [1m198/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0052 - mae: 0.0503

## [1m201/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m204/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m207/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m210/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m213/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m216/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0502

## [1m219/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0502

## [1m222/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0502

## [1m225/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0502

## [1m228/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0502

## [1m231/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0502

## [1m234/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0502

## [1m237/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0502

## [1m240/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0502

## [1m243/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0502

## [1m246/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0502

## [1m249/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0051 - mae: 0.0502

## [1m252/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0051 - mae: 0.0502
```

```
## [1m255/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0051 - mae: 0.0502

## [1m258/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0051 - mae: 0.0502

## [1m261/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0051 - mae: 0.0502

## [1m264/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0051 - mae: 0.0501

## [1m267/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0051 - mae: 0.0501

## [1m270/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0051 - mae: 0.0501

## [1m273/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 20m
s/step - loss: 0.0051 - mae: 0.0501

## [1m276/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 20m
s/step - loss: 0.0051 - mae: 0.0501

## [1m279/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 20m
s/step - loss: 0.0051 - mae: 0.0501

## [1m282/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0051 - mae: 0.0501

## [1m285/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 21m
s/step - loss: 0.0051 - mae: 0.0501

## [1m288/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 21m
s/step - loss: 0.0051 - mae: 0.0501

## [1m291/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 21m
s/step - loss: 0.0051 - mae: 0.0501

## [1m294/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 20m
s/step - loss: 0.0051 - mae: 0.0501

## [1m297/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m[0m [1m0s[0m 20m
s/step - loss: 0.0051 - mae: 0.0501

## [1m297/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m[0m [1m7s[0m 24m
s/step - loss: 0.0051 - mae: 0.0501 - val_loss: 0.0062 - val_mae: 0.0585

## Epoch 8/20

##

## [1m  1/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m15s[0m 54ms/step
- loss: 0.0065 - mae: 0.0568

## [1m  4/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22ms/step
- loss: 0.0060 - mae: 0.0553

## [1m  7/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 21ms/step
- loss: 0.0056 - mae: 0.0526
```

```
## [1m 10/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 21ms/step
- loss: 0.0055 - mae: 0.0515

## [1m 13/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21ms/step
- loss: 0.0053 - mae: 0.0509

## [1m 16/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0052 - mae: 0.0503

## [1m 19/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0051 - mae: 0.0499

## [1m 22/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0051 - mae: 0.0497

## [1m 25/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0051 - mae: 0.0496

## [1m 28/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0051 - mae: 0.0496

## [1m 31/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0050 - mae: 0.0495

## [1m 34/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0050 - mae: 0.0494

## [1m 37/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0050 - mae: 0.0494

## [1m 40/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0050 - mae: 0.0493

## [1m 43/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0050 - mae: 0.0493

## [1m 46/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0050 - mae: 0.0493

## [1m 49/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m 52/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m 55/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m 58/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m 61/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m 64/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m 67/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493
```

```
## [1m 70/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m 73/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0049 - mae: 0.0492

## [1m 76/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0049 - mae: 0.0492

## [1m 79/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0049 - mae: 0.0492

## [1m 82/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0049 - mae: 0.0491

## [1m 85/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0049 - mae: 0.0491

## [1m 88/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0049 - mae: 0.0491

## [1m 91/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0049 - mae: 0.0491

## [1m 94/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0049 - mae: 0.0491

## [1m 97/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0049 - mae: 0.0491

## [1m100/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0049 - mae: 0.0491

## [1m103/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0049 - mae: 0.0491

## [1m106/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0491

## [1m109/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0491

## [1m112/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0491

## [1m115/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0491

## [1m118/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0492

## [1m121/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0492

## [1m124/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0492

## [1m127/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0492
```

```
## [1m130/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0492

## [1m133/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0492

## [1m136/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0492

## [1m139/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m142/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m145/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m148/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m151/297[0m [32m━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m154/297[0m [32m━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m157/297[0m [32m━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m160/297[0m [32m━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m163/297[0m [32m━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m166/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m169/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m172/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m175/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m178/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m181/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m184/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493

## [1m187/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0493
```

```
## [1m190/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m193/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m196/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m199/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m202/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m205/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m208/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m211/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m214/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m217/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m220/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m223/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m226/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m229/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m232/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m235/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m238/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m241/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m244/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0493

## [1m247/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0048 - mae: 0.0494
```

```
## [1m250/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0494

## [1m253/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0494

## [1m256/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0494

## [1m259/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0494

## [1m262/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0494

## [1m265/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0048 - mae: 0.0494

## [1m268/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0494

## [1m271/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0494

## [1m274/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0494

## [1m277/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0494

## [1m280/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0495

## [1m283/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0495

## [1m286/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0495

## [1m289/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0495

## [1m292/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0495

## [1m295/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0495

## [1m297/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m[0m [1m7s[0m 25m
s/step - loss: 0.0049 - mae: 0.0495 - val_loss: 0.0059 - val_mae: 0.0560

## Epoch 9/20

##

## [1m  1/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m29s[0m 100ms/ste
p - loss: 0.0049 - mae: 0.0547

## [1m  3/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m10s[0m 36ms/step
- loss: 0.0043 - mae: 0.0494
```

```
## [1m  6/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m7s[0m 27ms/step
- loss: 0.0043 - mae: 0.0488

## [1m  9/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m7s[0m 24ms/step
- loss: 0.0044 - mae: 0.0492

## [1m 12/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 24ms/step
- loss: 0.0044 - mae: 0.0497

## [1m 15/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23m
s/step - loss: 0.0047 - mae: 0.0504

## [1m 18/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23m
s/step - loss: 0.0048 - mae: 0.0508

## [1m 21/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23m
s/step - loss: 0.0049 - mae: 0.0511

## [1m 24/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23m
s/step - loss: 0.0049 - mae: 0.0513

## [1m 27/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23m
s/step - loss: 0.0050 - mae: 0.0515

## [1m 30/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0051 - mae: 0.0515

## [1m 33/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0051 - mae: 0.0515

## [1m 36/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0051 - mae: 0.0514

## [1m 39/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0051 - mae: 0.0514

## [1m 42/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0051 - mae: 0.0513

## [1m 45/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0051 - mae: 0.0512

## [1m 48/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0050 - mae: 0.0512

## [1m 51/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0050 - mae: 0.0511

## [1m 54/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0050 - mae: 0.0510

## [1m 57/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0050 - mae: 0.0510

## [1m 60/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0050 - mae: 0.0509

## [1m 63/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0050 - mae: 0.0509
```

```
## [1m 65/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0050 - mae: 0.0508

## [1m 67/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0050 - mae: 0.0508

## [1m 70/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 22m
s/step - loss: 0.0050 - mae: 0.0508

## [1m 73/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 22m
s/step - loss: 0.0050 - mae: 0.0508

## [1m 76/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 22m
s/step - loss: 0.0050 - mae: 0.0507

## [1m 79/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 22m
s/step - loss: 0.0050 - mae: 0.0507

## [1m 82/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 22m
s/step - loss: 0.0050 - mae: 0.0506

## [1m 85/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 22m
s/step - loss: 0.0050 - mae: 0.0506

## [1m 88/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 22m
s/step - loss: 0.0050 - mae: 0.0506

## [1m 91/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 22m
s/step - loss: 0.0049 - mae: 0.0505

## [1m 94/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 22m
s/step - loss: 0.0049 - mae: 0.0505

## [1m 97/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 22m
s/step - loss: 0.0049 - mae: 0.0505

## [1m100/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 22m
s/step - loss: 0.0049 - mae: 0.0504

## [1m103/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 22m
s/step - loss: 0.0049 - mae: 0.0504

## [1m106/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0049 - mae: 0.0504

## [1m109/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0049 - mae: 0.0504

## [1m112/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0503

## [1m115/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0503

## [1m118/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0503

## [1m121/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0503
```

```
## [1m124/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0503

## [1m127/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0503

## [1m130/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0503

## [1m133/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0503

## [1m136/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0503

## [1m139/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0503

## [1m142/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0503

## [1m145/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0503

## [1m148/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0503

## [1m151/297[0m [32m━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0503

## [1m154/297[0m [32m━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0503

## [1m157/297[0m [32m━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0503

## [1m160/297[0m [32m━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0503

## [1m163/297[0m [32m━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0503

## [1m166/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0503

## [1m169/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0503

## [1m172/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0503

## [1m175/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0503

## [1m177/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0503

## [1m180/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0503
```

```
## [1m183/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0503

## [1m186/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0503

## [1m189/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0503

## [1m192/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0503

## [1m195/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0503

## [1m198/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0503

## [1m201/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0503

## [1m204/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0049 - mae: 0.0504

## [1m207/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0049 - mae: 0.0504

## [1m210/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0049 - mae: 0.0504

## [1m213/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0049 - mae: 0.0504

## [1m216/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0049 - mae: 0.0504

## [1m219/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0049 - mae: 0.0504

## [1m222/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0049 - mae: 0.0504

## [1m225/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0049 - mae: 0.0504

## [1m228/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0049 - mae: 0.0504

## [1m231/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0049 - mae: 0.0504

## [1m234/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0049 - mae: 0.0504

## [1m237/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0049 - mae: 0.0504

## [1m240/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0049 - mae: 0.0504
```

```
## [1m243/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0049 - mae: 0.0504

## [1m246/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0049 - mae: 0.0504

## [1m249/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0049 - mae: 0.0504

## [1m252/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0504

## [1m255/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0504

## [1m258/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0504

## [1m261/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0504

## [1m264/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0504

## [1m267/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0504

## [1m270/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0504

## [1m273/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0504

## [1m276/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0504

## [1m279/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0504

## [1m282/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0504

## [1m285/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0504

## [1m288/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0504

## [1m291/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0504

## [1m294/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0504

## [1m297/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0504

## [1m297/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m[0m [1m7s[0m 25m
s/step - loss: 0.0049 - mae: 0.0504 - val_loss: 0.0058 - val_mae: 0.0550
```

```
## Epoch 10/20

##

## [1m  1/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m32s[0m 109ms/ste
p - loss: 0.0036 - mae: 0.0398

## [1m  3/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m9s[0m 32ms/step
- loss: 0.0032 - mae: 0.0400

## [1m  5/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m8s[0m 29ms/step
- loss: 0.0032 - mae: 0.0413

## [1m  8/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m7s[0m 26ms/step
- loss: 0.0034 - mae: 0.0436

## [1m 11/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 24ms/step
- loss: 0.0037 - mae: 0.0451

## [1m 14/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23ms/step
- loss: 0.0038 - mae: 0.0459

## [1m 17/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23m
s/step - loss: 0.0039 - mae: 0.0467

## [1m 20/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22m
s/step - loss: 0.0040 - mae: 0.0472

## [1m 23/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22m
s/step - loss: 0.0041 - mae: 0.0476

## [1m 26/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0041 - mae: 0.0479

## [1m 29/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0042 - mae: 0.0481

## [1m 32/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0042 - mae: 0.0483

## [1m 35/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0043 - mae: 0.0484

## [1m 38/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0043 - mae: 0.0484

## [1m 41/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0043 - mae: 0.0484

## [1m 44/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0043 - mae: 0.0484

## [1m 47/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0043 - mae: 0.0484

## [1m 50/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0043 - mae: 0.0484

## [1m 53/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0043 - mae: 0.0483
```

```
## [1m 56/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0043 - mae: 0.0483

## [1m 59/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0043 - mae: 0.0482

## [1m 62/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0043 - mae: 0.0482

## [1m 65/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0043 - mae: 0.0481

## [1m 68/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0043 - mae: 0.0481

## [1m 71/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0043 - mae: 0.0481

## [1m 74/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0043 - mae: 0.0480

## [1m 77/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0043 - mae: 0.0480

## [1m 80/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0043 - mae: 0.0480

## [1m 83/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0043 - mae: 0.0480

## [1m 86/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0043 - mae: 0.0480

## [1m 89/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0043 - mae: 0.0480

## [1m 92/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0044 - mae: 0.0480

## [1m 95/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0044 - mae: 0.0480

## [1m 98/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0044 - mae: 0.0480

## [1m101/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0044 - mae: 0.0480

## [1m104/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0044 - mae: 0.0480

## [1m107/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0480

## [1m110/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0480

## [1m113/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0479
```

```
## [1m116/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0479

## [1m119/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0479

## [1m122/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0479

## [1m125/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0479

## [1m128/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0479

## [1m131/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0479

## [1m134/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0480

## [1m137/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0480

## [1m140/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0480

## [1m143/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0480

## [1m146/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0480

## [1m149/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0480

## [1m152/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0480

## [1m155/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0044 - mae: 0.0480

## [1m158/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0044 - mae: 0.0480

## [1m161/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0044 - mae: 0.0480

## [1m164/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0044 - mae: 0.0480

## [1m167/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0044 - mae: 0.0480

## [1m170/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0045 - mae: 0.0481

## [1m173/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0045 - mae: 0.0481
```

```
## [1m176/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0045 - mae: 0.0481

## [1m179/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0045 - mae: 0.0481

## [1m182/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0045 - mae: 0.0481

## [1m185/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0045 - mae: 0.0481

## [1m188/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0045 - mae: 0.0481

## [1m191/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0045 - mae: 0.0481

## [1m194/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0045 - mae: 0.0481

## [1m197/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0045 - mae: 0.0481

## [1m200/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0045 - mae: 0.0481

## [1m203/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0045 - mae: 0.0481

## [1m206/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0045 - mae: 0.0482

## [1m209/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0045 - mae: 0.0482

## [1m212/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0045 - mae: 0.0482

## [1m215/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0045 - mae: 0.0482

## [1m218/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0045 - mae: 0.0482

## [1m221/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0045 - mae: 0.0482

## [1m224/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0045 - mae: 0.0482

## [1m227/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0045 - mae: 0.0482

## [1m230/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0045 - mae: 0.0483

## [1m233/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0045 - mae: 0.0483
```

```
## [1m236/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0045 - mae: 0.0483

## [1m239/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0045 - mae: 0.0483

## [1m242/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0045 - mae: 0.0483

## [1m245/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0045 - mae: 0.0483

## [1m248/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0046 - mae: 0.0483

## [1m251/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0483

## [1m254/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0484

## [1m257/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0484

## [1m260/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0484

## [1m263/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0484

## [1m266/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0484

## [1m269/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0484

## [1m272/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0484

## [1m275/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485

## [1m278/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485

## [1m281/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485

## [1m284/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485

## [1m287/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485

## [1m290/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485

## [1m293/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485
```

```
## [1m296/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485

## [1m297/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m[0m [1m7s[0m 24m
s/step - loss: 0.0046 - mae: 0.0485 - val_loss: 0.0058 - val_mae: 0.0551

## Epoch 11/20

##

## [1m  1/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m44s[0m 150ms/ste
p - loss: 0.0030 - mae: 0.0423

## [1m  3/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m10s[0m 37ms/step
- loss: 0.0039 - mae: 0.0440

## [1m  6/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m8s[0m 28ms/step
- loss: 0.0041 - mae: 0.0452

## [1m  9/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m7s[0m 26ms/step
- loss: 0.0042 - mae: 0.0462

## [1m 12/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 24ms/step
- loss: 0.0043 - mae: 0.0465

## [1m 15/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23m
s/step - loss: 0.0043 - mae: 0.0467

## [1m 18/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23m
s/step - loss: 0.0043 - mae: 0.0468

## [1m 21/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22m
s/step - loss: 0.0045 - mae: 0.0472

## [1m 24/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22m
s/step - loss: 0.0046 - mae: 0.0476

## [1m 27/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0047 - mae: 0.0479

## [1m 30/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0047 - mae: 0.0483

## [1m 33/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0048 - mae: 0.0486

## [1m 36/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0049 - mae: 0.0489

## [1m 39/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0049 - mae: 0.0492

## [1m 42/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0050 - mae: 0.0494

## [1m 45/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0050 - mae: 0.0497

## [1m 48/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0050 - mae: 0.0499
```

```
## [1m 51/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0051 - mae: 0.0501

## [1m 54/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0051 - mae: 0.0502

## [1m 57/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0051 - mae: 0.0504

## [1m 60/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0051 - mae: 0.0505

## [1m 63/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0051 - mae: 0.0506

## [1m 66/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0051 - mae: 0.0507

## [1m 69/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0508

## [1m 72/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0509

## [1m 75/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0510

## [1m 78/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0510

## [1m 81/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0511

## [1m 84/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0511

## [1m 87/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0512

## [1m 90/297[0m [32m━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0512

## [1m 93/297[0m [32m━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0512

## [1m 96/297[0m [32m━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0513

## [1m 99/297[0m [32m━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0513

## [1m102/297[0m [32m━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0513

## [1m105/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0513

## [1m108/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0513
```

```
## [1m111/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0513

## [1m114/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0514

## [1m117/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0514

## [1m120/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0514

## [1m123/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0514

## [1m126/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0514

## [1m129/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0514

## [1m132/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0514

## [1m135/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0514

## [1m138/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0514

## [1m141/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0514

## [1m144/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0514

## [1m147/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0514

## [1m150/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0514

## [1m153/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0052 - mae: 0.0514

## [1m156/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0052 - mae: 0.0514

## [1m159/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0052 - mae: 0.0513

## [1m162/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0052 - mae: 0.0513

## [1m165/297[0m [32m━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0052 - mae: 0.0513

## [1m168/297[0m [32m━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0052 - mae: 0.0513
```

```
## [1m171/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0052 - mae: 0.0513

## [1m174/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0052 - mae: 0.0513

## [1m177/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0052 - mae: 0.0513

## [1m180/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0052 - mae: 0.0513

## [1m183/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0052 - mae: 0.0513

## [1m186/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0052 - mae: 0.0513

## [1m189/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0052 - mae: 0.0513

## [1m192/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0052 - mae: 0.0513

## [1m195/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0052 - mae: 0.0513

## [1m198/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0052 - mae: 0.0512

## [1m201/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0052 - mae: 0.0512

## [1m204/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0052 - mae: 0.0512

## [1m207/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0052 - mae: 0.0512

## [1m210/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0052 - mae: 0.0512

## [1m213/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0052 - mae: 0.0512

## [1m216/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0052 - mae: 0.0512

## [1m219/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0052 - mae: 0.0511

## [1m222/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0052 - mae: 0.0511

## [1m225/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0052 - mae: 0.0511

## [1m228/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0052 - mae: 0.0511
```

```
## [1m231/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0052 - mae: 0.0511

## [1m234/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0052 - mae: 0.0511

## [1m237/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0052 - mae: 0.0510

## [1m240/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0052 - mae: 0.0510

## [1m243/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0051 - mae: 0.0510

## [1m246/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0051 - mae: 0.0510

## [1m249/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0051 - mae: 0.0510

## [1m252/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0051 - mae: 0.0510

## [1m255/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0051 - mae: 0.0509

## [1m258/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0051 - mae: 0.0509

## [1m261/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0051 - mae: 0.0509

## [1m264/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0051 - mae: 0.0509

## [1m267/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0051 - mae: 0.0509

## [1m270/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0051 - mae: 0.0509

## [1m273/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0051 - mae: 0.0509

## [1m276/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0051 - mae: 0.0508

## [1m279/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0051 - mae: 0.0508

## [1m282/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0051 - mae: 0.0508

## [1m285/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0051 - mae: 0.0508

## [1m288/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0051 - mae: 0.0508
```

```
## [1m291/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 20m
s/step - loss: 0.0051 - mae: 0.0508

## [1m294/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 20m
s/step - loss: 0.0051 - mae: 0.0508

## [1m297/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m[0m [1m0s[0m 20m
s/step - loss: 0.0051 - mae: 0.0507

## [1m297/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m[0m [1m7s[0m 25m
s/step - loss: 0.0051 - mae: 0.0507 - val_loss: 0.0058 - val_mae: 0.0557

## Epoch 12/20

##

## [1m  1/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m16s[0m 55ms/step
- loss: 0.0019 - mae: 0.0373

## [1m  3/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m8s[0m 31ms/step
- loss: 0.0025 - mae: 0.0381

## [1m  5/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m8s[0m 29ms/step
- loss: 0.0031 - mae: 0.0404

## [1m  8/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m7s[0m 26ms/step
- loss: 0.0037 - mae: 0.0424

## [1m 11/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m7s[0m 25ms/step
- loss: 0.0042 - mae: 0.0437

## [1m 14/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 24ms/step
- loss: 0.0043 - mae: 0.0442

## [1m 17/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23m
s/step - loss: 0.0044 - mae: 0.0446

## [1m 20/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23m
s/step - loss: 0.0044 - mae: 0.0449

## [1m 23/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22m
s/step - loss: 0.0044 - mae: 0.0452

## [1m 26/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22m
s/step - loss: 0.0045 - mae: 0.0455

## [1m 29/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0045 - mae: 0.0458

## [1m 32/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0046 - mae: 0.0462

## [1m 35/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0047 - mae: 0.0465

## [1m 38/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0047 - mae: 0.0467

## [1m 41/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0047 - mae: 0.0470
```

```
## [1m 44/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0048 - mae: 0.0471

## [1m 47/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0048 - mae: 0.0473

## [1m 50/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0048 - mae: 0.0474

## [1m 53/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0048 - mae: 0.0475

## [1m 56/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0048 - mae: 0.0476

## [1m 59/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0048 - mae: 0.0477

## [1m 62/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0048 - mae: 0.0477

## [1m 65/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0048 - mae: 0.0478

## [1m 68/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0048 - mae: 0.0479

## [1m 71/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0048 - mae: 0.0479

## [1m 74/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0048 - mae: 0.0480

## [1m 77/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0048 - mae: 0.0480

## [1m 80/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0048 - mae: 0.0481

## [1m 83/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0048 - mae: 0.0481

## [1m 86/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0048 - mae: 0.0482

## [1m 89/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0048 - mae: 0.0482

## [1m 92/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0048 - mae: 0.0482

## [1m 95/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0048 - mae: 0.0483

## [1m 98/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0048 - mae: 0.0483

## [1m101/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0048 - mae: 0.0483
```

```
## [1m104/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0048 - mae: 0.0483

## [1m107/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0048 - mae: 0.0484

## [1m110/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0048 - mae: 0.0484

## [1m113/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0048 - mae: 0.0484

## [1m116/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0048 - mae: 0.0484

## [1m119/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0048 - mae: 0.0484

## [1m122/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0048 - mae: 0.0485

## [1m125/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0048 - mae: 0.0485

## [1m128/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0048 - mae: 0.0485

## [1m131/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0048 - mae: 0.0485

## [1m134/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0048 - mae: 0.0485

## [1m137/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0048 - mae: 0.0486

## [1m140/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0048 - mae: 0.0486

## [1m143/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0048 - mae: 0.0486

## [1m146/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0048 - mae: 0.0486

## [1m149/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0048 - mae: 0.0486

## [1m152/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0048 - mae: 0.0486

## [1m155/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0048 - mae: 0.0486

## [1m158/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0048 - mae: 0.0486

## [1m161/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0048 - mae: 0.0486
```

```
## [1m164/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0048 - mae: 0.0487

## [1m167/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0048 - mae: 0.0487

## [1m170/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0048 - mae: 0.0487

## [1m173/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0048 - mae: 0.0487

## [1m176/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0048 - mae: 0.0487

## [1m179/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0048 - mae: 0.0487

## [1m182/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0048 - mae: 0.0487

## [1m185/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0048 - mae: 0.0487

## [1m188/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0048 - mae: 0.0487

## [1m191/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0048 - mae: 0.0487

## [1m194/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0048 - mae: 0.0487

## [1m197/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0048 - mae: 0.0487

## [1m200/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0048 - mae: 0.0487

## [1m203/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0048 - mae: 0.0487

## [1m206/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0048 - mae: 0.0487

## [1m209/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0048 - mae: 0.0487

## [1m212/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0048 - mae: 0.0487

## [1m215/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0048 - mae: 0.0487

## [1m218/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0048 - mae: 0.0487

## [1m221/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0048 - mae: 0.0487
```

```
## [1m224/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0048 - mae: 0.0487

## [1m227/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0048 - mae: 0.0487

## [1m230/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0048 - mae: 0.0487

## [1m233/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0048 - mae: 0.0487

## [1m236/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0048 - mae: 0.0487

## [1m239/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0048 - mae: 0.0487

## [1m242/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0048 - mae: 0.0487

## [1m245/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0048 - mae: 0.0487

## [1m248/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0048 - mae: 0.0487

## [1m251/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0048 - mae: 0.0487

## [1m254/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0048 - mae: 0.0487

## [1m257/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0048 - mae: 0.0487

## [1m260/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0048 - mae: 0.0487

## [1m263/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0048 - mae: 0.0487

## [1m266/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0048 - mae: 0.0487

## [1m269/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0048 - mae: 0.0487

## [1m272/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0048 - mae: 0.0487

## [1m275/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0048 - mae: 0.0487

## [1m278/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0048 - mae: 0.0487

## [1m281/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 20m
s/step - loss: 0.0048 - mae: 0.0488
```

```
## [1m284/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 20m
s/step - loss: 0.0048 - mae: 0.0488

## [1m287/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 20m
s/step - loss: 0.0048 - mae: 0.0488

## [1m290/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 20m
s/step - loss: 0.0048 - mae: 0.0488

## [1m293/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 20m
s/step - loss: 0.0048 - mae: 0.0488

## [1m296/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 20m
s/step - loss: 0.0048 - mae: 0.0488

## [1m297/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m[0m [1m7s[0m 24m
s/step - loss: 0.0048 - mae: 0.0488 - val_loss: 0.0058 - val_mae: 0.0552

## Epoch 13/20

##

## [1m  1/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m19s[0m 66ms/step
- loss: 0.0038 - mae: 0.0456

## [1m  3/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m7s[0m 26ms/step
- loss: 0.0034 - mae: 0.0426

## [1m  5/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m7s[0m 26ms/step
- loss: 0.0035 - mae: 0.0433

## [1m  7/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m7s[0m 26ms/step
- loss: 0.0037 - mae: 0.0444

## [1m 10/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 24ms/step
- loss: 0.0037 - mae: 0.0449

## [1m 13/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 24ms/step
- loss: 0.0038 - mae: 0.0450

## [1m 16/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23m
s/step - loss: 0.0038 - mae: 0.0450

## [1m 19/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23m
s/step - loss: 0.0038 - mae: 0.0451

## [1m 22/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22m
s/step - loss: 0.0039 - mae: 0.0453

## [1m 25/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0039 - mae: 0.0454

## [1m 28/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0039 - mae: 0.0455

## [1m 31/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0039 - mae: 0.0456

## [1m 34/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0040 - mae: 0.0457
```

```
## [1m 37/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0040 - mae: 0.0458

## [1m 40/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0041 - mae: 0.0460

## [1m 43/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0041 - mae: 0.0462

## [1m 46/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0041 - mae: 0.0463

## [1m 49/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0041 - mae: 0.0464

## [1m 52/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0042 - mae: 0.0465

## [1m 55/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0042 - mae: 0.0466

## [1m 58/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0042 - mae: 0.0467

## [1m 61/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0042 - mae: 0.0469

## [1m 64/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0043 - mae: 0.0470

## [1m 67/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0043 - mae: 0.0471

## [1m 70/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0043 - mae: 0.0472

## [1m 73/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0043 - mae: 0.0473

## [1m 76/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0043 - mae: 0.0473

## [1m 79/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0044 - mae: 0.0474

## [1m 82/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0044 - mae: 0.0474

## [1m 85/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0044 - mae: 0.0475

## [1m 88/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0044 - mae: 0.0475

## [1m 91/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0044 - mae: 0.0475

## [1m 94/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0044 - mae: 0.0476
```

```
## [1m 97/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0044 - mae: 0.0476

## [1m100/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0044 - mae: 0.0476

## [1m103/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0044 - mae: 0.0476

## [1m106/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0476

## [1m109/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0477

## [1m112/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0477

## [1m115/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0477

## [1m118/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0477

## [1m121/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0477

## [1m124/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0477

## [1m127/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0477

## [1m130/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0477

## [1m133/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0478

## [1m136/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0478

## [1m139/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0478

## [1m142/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0045 - mae: 0.0478

## [1m145/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0045 - mae: 0.0478

## [1m148/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0045 - mae: 0.0478

## [1m151/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0045 - mae: 0.0478

## [1m154/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0045 - mae: 0.0478
```

```
## [1m157/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0045 - mae: 0.0478

## [1m160/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0045 - mae: 0.0479

## [1m163/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0045 - mae: 0.0479

## [1m166/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0045 - mae: 0.0479

## [1m169/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0045 - mae: 0.0479

## [1m172/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0045 - mae: 0.0479

## [1m175/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0045 - mae: 0.0479

## [1m178/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0045 - mae: 0.0480

## [1m181/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0045 - mae: 0.0480

## [1m184/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0045 - mae: 0.0480

## [1m187/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0045 - mae: 0.0480

## [1m189/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0045 - mae: 0.0480

## [1m192/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0045 - mae: 0.0480

## [1m195/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0045 - mae: 0.0480

## [1m198/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0045 - mae: 0.0480

## [1m201/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0045 - mae: 0.0480

## [1m204/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0045 - mae: 0.0480

## [1m207/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0045 - mae: 0.0480

## [1m210/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0045 - mae: 0.0480

## [1m213/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0046 - mae: 0.0480
```

```
## [1m216/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0046 - mae: 0.0480

## [1m219/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0046 - mae: 0.0481

## [1m222/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0046 - mae: 0.0481

## [1m224/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0046 - mae: 0.0481

## [1m226/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0046 - mae: 0.0481

## [1m228/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 22m
s/step - loss: 0.0046 - mae: 0.0481

## [1m230/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 22m
s/step - loss: 0.0046 - mae: 0.0481

## [1m232/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 22m
s/step - loss: 0.0046 - mae: 0.0481

## [1m234/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 22m
s/step - loss: 0.0046 - mae: 0.0481

## [1m236/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 22m
s/step - loss: 0.0046 - mae: 0.0481

## [1m238/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 22m
s/step - loss: 0.0046 - mae: 0.0481

## [1m240/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 22m
s/step - loss: 0.0046 - mae: 0.0481

## [1m242/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 22m
s/step - loss: 0.0046 - mae: 0.0481

## [1m244/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 22m
s/step - loss: 0.0046 - mae: 0.0481

## [1m246/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 22m
s/step - loss: 0.0046 - mae: 0.0481

## [1m248/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 23m
s/step - loss: 0.0046 - mae: 0.0481

## [1m250/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 23m
s/step - loss: 0.0046 - mae: 0.0481

## [1m252/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 23m
s/step - loss: 0.0046 - mae: 0.0481

## [1m254/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m0s[0m 23m
s/step - loss: 0.0046 - mae: 0.0481

## [1m256/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m0s[0m 23m
s/step - loss: 0.0046 - mae: 0.0482
```

```
## [1m258/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 23m
s/step - loss: 0.0046 - mae: 0.0482

## [1m260/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 23m
s/step - loss: 0.0046 - mae: 0.0482

## [1m262/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 23m
s/step - loss: 0.0046 - mae: 0.0482

## [1m264/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 23m
s/step - loss: 0.0046 - mae: 0.0482

## [1m266/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 23m
s/step - loss: 0.0046 - mae: 0.0482

## [1m268/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 23m
s/step - loss: 0.0046 - mae: 0.0482

## [1m270/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 23m
s/step - loss: 0.0046 - mae: 0.0482

## [1m272/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 23m
s/step - loss: 0.0046 - mae: 0.0482

## [1m274/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 23m
s/step - loss: 0.0046 - mae: 0.0482

## [1m276/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 23m
s/step - loss: 0.0046 - mae: 0.0482

## [1m278/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 23m
s/step - loss: 0.0046 - mae: 0.0482

## [1m280/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 23m
s/step - loss: 0.0046 - mae: 0.0482

## [1m282/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 23m
s/step - loss: 0.0046 - mae: 0.0482

## [1m284/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 23m
s/step - loss: 0.0046 - mae: 0.0482

## [1m286/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 23m
s/step - loss: 0.0046 - mae: 0.0482

## [1m288/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 23m
s/step - loss: 0.0046 - mae: 0.0482

## [1m290/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 23m
s/step - loss: 0.0046 - mae: 0.0482

## [1m292/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 23m
s/step - loss: 0.0046 - mae: 0.0483

## [1m294/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 23m
s/step - loss: 0.0046 - mae: 0.0483

## [1m296/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 24m
s/step - loss: 0.0046 - mae: 0.0483
```

```
## [1m297/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m[0m [1m8s[0m 27m
s/step - loss: 0.0046 - mae: 0.0483 - val_loss: 0.0062 - val_mae: 0.0579

## Epoch 14/20

##

## [1m  1/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m27s[0m 93ms/step
- loss: 0.0041 - mae: 0.0470

## [1m  3/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m8s[0m 30ms/step
- loss: 0.0039 - mae: 0.0470

## [1m  6/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m7s[0m 26ms/step
- loss: 0.0041 - mae: 0.0475

## [1m  9/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 24ms/step
- loss: 0.0042 - mae: 0.0478

## [1m 12/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23ms/step
- loss: 0.0046 - mae: 0.0488

## [1m 15/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22m
s/step - loss: 0.0049 - mae: 0.0494

## [1m 18/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22m
s/step - loss: 0.0050 - mae: 0.0496

## [1m 21/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22m
s/step - loss: 0.0051 - mae: 0.0498

## [1m 24/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0051 - mae: 0.0499

## [1m 27/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0052 - mae: 0.0499

## [1m 30/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0052 - mae: 0.0500

## [1m 33/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0051 - mae: 0.0499

## [1m 36/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0051 - mae: 0.0499

## [1m 39/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0051 - mae: 0.0498

## [1m 42/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0051 - mae: 0.0498

## [1m 45/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0051 - mae: 0.0497

## [1m 48/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0051 - mae: 0.0497

## [1m 51/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0051 - mae: 0.0497
```

```
## [1m 54/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0051 - mae: 0.0497

## [1m 57/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0050 - mae: 0.0497

## [1m 60/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0496

## [1m 63/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0496

## [1m 66/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0496

## [1m 69/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0496

## [1m 72/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0496

## [1m 75/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0496

## [1m 78/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0495

## [1m 81/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0495

## [1m 83/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0495

## [1m 85/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0495

## [1m 87/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0495

## [1m 89/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 22m
s/step - loss: 0.0050 - mae: 0.0494

## [1m 91/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 22m
s/step - loss: 0.0050 - mae: 0.0494

## [1m 93/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 22m
s/step - loss: 0.0050 - mae: 0.0494

## [1m 95/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 22m
s/step - loss: 0.0050 - mae: 0.0494

## [1m 97/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 22m
s/step - loss: 0.0050 - mae: 0.0494

## [1m 99/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 22m
s/step - loss: 0.0050 - mae: 0.0494

## [1m101/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 22m
s/step - loss: 0.0050 - mae: 0.0494
```

```
## [1m103/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 22m
s/step - loss: 0.0050 - mae: 0.0494

## [1m105/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 23m
s/step - loss: 0.0050 - mae: 0.0494

## [1m107/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 23m
s/step - loss: 0.0050 - mae: 0.0494

## [1m109/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 23m
s/step - loss: 0.0050 - mae: 0.0494

## [1m111/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 23m
s/step - loss: 0.0050 - mae: 0.0493

## [1m113/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 23m
s/step - loss: 0.0050 - mae: 0.0493

## [1m115/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 23m
s/step - loss: 0.0050 - mae: 0.0493

## [1m117/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 23m
s/step - loss: 0.0050 - mae: 0.0493

## [1m119/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 23m
s/step - loss: 0.0050 - mae: 0.0493

## [1m121/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 23m
s/step - loss: 0.0050 - mae: 0.0493

## [1m123/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 24m
s/step - loss: 0.0050 - mae: 0.0493

## [1m125/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 24m
s/step - loss: 0.0050 - mae: 0.0493

## [1m127/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 24m
s/step - loss: 0.0050 - mae: 0.0493

## [1m129/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 24m
s/step - loss: 0.0050 - mae: 0.0493

## [1m131/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 24m
s/step - loss: 0.0050 - mae: 0.0493

## [1m133/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 24m
s/step - loss: 0.0050 - mae: 0.0493

## [1m135/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 24m
s/step - loss: 0.0050 - mae: 0.0493

## [1m137/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 24m
s/step - loss: 0.0050 - mae: 0.0493

## [1m139/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 24m
s/step - loss: 0.0050 - mae: 0.0493

## [1m141/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 24m
s/step - loss: 0.0050 - mae: 0.0492
```

```
## [1m143/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 24m
s/step - loss: 0.0050 - mae: 0.0492

## [1m145/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 24m
s/step - loss: 0.0050 - mae: 0.0492

## [1m147/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 24m
s/step - loss: 0.0050 - mae: 0.0492

## [1m149/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 24m
s/step - loss: 0.0050 - mae: 0.0492

## [1m151/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 24m
s/step - loss: 0.0050 - mae: 0.0492

## [1m153/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 24m
s/step - loss: 0.0050 - mae: 0.0492

## [1m155/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 24m
s/step - loss: 0.0050 - mae: 0.0492

## [1m157/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 25m
s/step - loss: 0.0050 - mae: 0.0492

## [1m159/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 25m
s/step - loss: 0.0050 - mae: 0.0492

## [1m161/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 25m
s/step - loss: 0.0050 - mae: 0.0492

## [1m163/297[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 25m
s/step - loss: 0.0050 - mae: 0.0492

## [1m165/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m3s[0m 25m
s/step - loss: 0.0050 - mae: 0.0492

## [1m167/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m3s[0m 25m
s/step - loss: 0.0050 - mae: 0.0492

## [1m169/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m3s[0m 25m
s/step - loss: 0.0050 - mae: 0.0492

## [1m171/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m3s[0m 25m
s/step - loss: 0.0050 - mae: 0.0492

## [1m173/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m3s[0m 25m
s/step - loss: 0.0050 - mae: 0.0492

## [1m175/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m3s[0m 25m
s/step - loss: 0.0050 - mae: 0.0492

## [1m177/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 25m
s/step - loss: 0.0050 - mae: 0.0492

## [1m179/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━[0m [1m2s[0m 25m
s/step - loss: 0.0050 - mae: 0.0492

## [1m181/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━[0m [1m2s[0m 25m
s/step - loss: 0.0050 - mae: 0.0491
```

```
## [1m183/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 25m
s/step - loss: 0.0050 - mae: 0.0491

## [1m185/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 25m
s/step - loss: 0.0049 - mae: 0.0491

## [1m187/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 25m
s/step - loss: 0.0049 - mae: 0.0491

## [1m189/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 25m
s/step - loss: 0.0049 - mae: 0.0491

## [1m191/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 25m
s/step - loss: 0.0049 - mae: 0.0491

## [1m193/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 25m
s/step - loss: 0.0049 - mae: 0.0491

## [1m195/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m2s[0m 25m
s/step - loss: 0.0049 - mae: 0.0491

## [1m197/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m2s[0m 25m
s/step - loss: 0.0049 - mae: 0.0491

## [1m199/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m2s[0m 25m
s/step - loss: 0.0049 - mae: 0.0491

## [1m201/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m2s[0m 25m
s/step - loss: 0.0049 - mae: 0.0491

## [1m203/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m2s[0m 25m
s/step - loss: 0.0049 - mae: 0.0491

## [1m205/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m2s[0m 25m
s/step - loss: 0.0049 - mae: 0.0491

## [1m207/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m2s[0m 25m
s/step - loss: 0.0049 - mae: 0.0491

## [1m209/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m2s[0m 25m
s/step - loss: 0.0049 - mae: 0.0491

## [1m211/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m2s[0m 25m
s/step - loss: 0.0049 - mae: 0.0490

## [1m213/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m2s[0m 25m
s/step - loss: 0.0049 - mae: 0.0490

## [1m215/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m2s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m217/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m2s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m219/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m221/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490
```

```
## [1m223/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m225/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m227/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m229/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m231/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m233/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m235/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m237/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m239/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m1s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m241/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m1s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m243/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m1s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m245/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m1s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m247/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m1s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m249/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m1s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m251/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m1s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m253/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m1s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m255/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m1s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m257/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m1s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m259/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m261/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490
```

```
## [1m263/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m265/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m267/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m269/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m271/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m273/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m275/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m277/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m279/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m281/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m283/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m285/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m287/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m289/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m291/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m293/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m295/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m297/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m[0m [1m0s[0m 26m
s/step - loss: 0.0049 - mae: 0.0490

## [1m297/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m[0m [1m9s[0m 30m
s/step - loss: 0.0049 - mae: 0.0490 - val_loss: 0.0057 - val_mae: 0.0550

## Epoch 15/20

##
```

```
## [1m  1/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m25s[0m 85ms/step
- loss: 0.0074 - mae: 0.0595

## [1m  4/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 24ms/step
- loss: 0.0059 - mae: 0.0537

## [1m  7/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23ms/step
- loss: 0.0055 - mae: 0.0528

## [1m 10/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22ms/step
- loss: 0.0053 - mae: 0.0522

## [1m 13/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22ms/step
- loss: 0.0052 - mae: 0.0521

## [1m 16/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 21m
s/step - loss: 0.0052 - mae: 0.0518

## [1m 19/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0051 - mae: 0.0516

## [1m 22/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0050 - mae: 0.0514

## [1m 25/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0050 - mae: 0.0514

## [1m 28/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0050 - mae: 0.0514

## [1m 31/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0051 - mae: 0.0513

## [1m 34/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0051 - mae: 0.0513

## [1m 37/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0051 - mae: 0.0512

## [1m 40/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0051 - mae: 0.0512

## [1m 43/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0051 - mae: 0.0512

## [1m 46/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0051 - mae: 0.0513

## [1m 49/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0051 - mae: 0.0513

## [1m 52/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0052 - mae: 0.0513

## [1m 55/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0052 - mae: 0.0513

## [1m 58/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0052 - mae: 0.0513
```

```
## [1m 61/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0513

## [1m 64/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0513

## [1m 67/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0513

## [1m 70/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0512

## [1m 73/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0512

## [1m 76/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0511

## [1m 79/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0511

## [1m 82/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0510

## [1m 85/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0510

## [1m 88/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0510

## [1m 91/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0509

## [1m 94/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0509

## [1m 97/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0509

## [1m100/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0509

## [1m103/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0508

## [1m106/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0052 - mae: 0.0508

## [1m109/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0508

## [1m112/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0508

## [1m115/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0508

## [1m118/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0508
```

```
## [1m121/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0507

## [1m124/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0507

## [1m127/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0507

## [1m130/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0507

## [1m133/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0507

## [1m136/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0051 - mae: 0.0507

## [1m139/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0051 - mae: 0.0506

## [1m142/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0051 - mae: 0.0506

## [1m145/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0051 - mae: 0.0506

## [1m148/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0051 - mae: 0.0506

## [1m151/297[0m [32m━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0051 - mae: 0.0505

## [1m154/297[0m [32m━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0505

## [1m157/297[0m [32m━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0505

## [1m160/297[0m [32m━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0505

## [1m163/297[0m [32m━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0505

## [1m166/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0504

## [1m169/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0504

## [1m172/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0504

## [1m175/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0504

## [1m178/297[0m [32m━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0504
```

```
## [1m181/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m184/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m187/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m190/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m193/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m196/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0503

## [1m199/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0502

## [1m202/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0502

## [1m205/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0502

## [1m208/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0502

## [1m211/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0502

## [1m214/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0502

## [1m217/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0502

## [1m220/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0502

## [1m223/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0502

## [1m226/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0502

## [1m229/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0501

## [1m232/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0501

## [1m235/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0050 - mae: 0.0501

## [1m238/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0050 - mae: 0.0501
```

```
## [1m241/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0050 - mae: 0.0501

## [1m244/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0050 - mae: 0.0501

## [1m247/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0050 - mae: 0.0501

## [1m250/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0501

## [1m253/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0501

## [1m256/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0501

## [1m259/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0501

## [1m262/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0501

## [1m265/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m268/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m271/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m274/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m277/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m280/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m283/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m286/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m289/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m292/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0500

## [1m295/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0499

## [1m297/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m[0m [1m7s[0m 24m
s/step - loss: 0.0050 - mae: 0.0499 - val_loss: 0.0058 - val_mae: 0.0555
```

```
## Epoch 16/20

##

## [1m  1/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m31s[0m 106ms/ste
p - loss: 0.0030 - mae: 0.0408

## [1m  4/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 24ms/step
- loss: 0.0036 - mae: 0.0458

## [1m  6/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m7s[0m 25ms/step
- loss: 0.0038 - mae: 0.0470

## [1m  9/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 24ms/step
- loss: 0.0042 - mae: 0.0483

## [1m 12/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23ms/step
- loss: 0.0044 - mae: 0.0489

## [1m 15/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22m
s/step - loss: 0.0045 - mae: 0.0491

## [1m 18/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22m
s/step - loss: 0.0045 - mae: 0.0492

## [1m 21/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0045 - mae: 0.0492

## [1m 24/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0045 - mae: 0.0491

## [1m 27/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0045 - mae: 0.0491

## [1m 30/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0045 - mae: 0.0490

## [1m 33/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0045 - mae: 0.0489

## [1m 36/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0045 - mae: 0.0488

## [1m 39/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0045 - mae: 0.0487

## [1m 42/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0045 - mae: 0.0487

## [1m 45/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0045 - mae: 0.0487

## [1m 48/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0045 - mae: 0.0487

## [1m 51/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0045 - mae: 0.0487

## [1m 54/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0045 - mae: 0.0487
```

```
## [1m 57/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0045 - mae: 0.0487

## [1m 60/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0045 - mae: 0.0487

## [1m 63/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0045 - mae: 0.0487

## [1m 66/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0045 - mae: 0.0487

## [1m 69/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0045 - mae: 0.0487

## [1m 72/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0045 - mae: 0.0487

## [1m 75/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 20m
s/step - loss: 0.0045 - mae: 0.0487

## [1m 78/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 20m
s/step - loss: 0.0045 - mae: 0.0487

## [1m 81/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 20m
s/step - loss: 0.0045 - mae: 0.0487

## [1m 84/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 20m
s/step - loss: 0.0045 - mae: 0.0487

## [1m 87/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 20m
s/step - loss: 0.0045 - mae: 0.0487

## [1m 90/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 20m
s/step - loss: 0.0045 - mae: 0.0487

## [1m 93/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 20m
s/step - loss: 0.0045 - mae: 0.0487

## [1m 96/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 20m
s/step - loss: 0.0045 - mae: 0.0487

## [1m 99/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 20m
s/step - loss: 0.0045 - mae: 0.0487

## [1m102/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 20m
s/step - loss: 0.0045 - mae: 0.0487

## [1m105/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 20m
s/step - loss: 0.0045 - mae: 0.0487

## [1m108/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 20m
s/step - loss: 0.0045 - mae: 0.0487

## [1m111/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 20m
s/step - loss: 0.0045 - mae: 0.0487

## [1m114/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 20m
s/step - loss: 0.0045 - mae: 0.0487
```

```
## [1m117/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 20m
s/step - loss: 0.0045 - mae: 0.0487

## [1m120/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 20m
s/step - loss: 0.0045 - mae: 0.0487

## [1m123/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 20m
s/step - loss: 0.0045 - mae: 0.0487

## [1m126/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 20m
s/step - loss: 0.0045 - mae: 0.0487

## [1m129/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 20m
s/step - loss: 0.0045 - mae: 0.0487

## [1m132/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 20m
s/step - loss: 0.0045 - mae: 0.0487

## [1m135/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 20m
s/step - loss: 0.0045 - mae: 0.0486

## [1m138/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 20m
s/step - loss: 0.0045 - mae: 0.0486

## [1m141/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 20m
s/step - loss: 0.0045 - mae: 0.0486

## [1m144/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 20m
s/step - loss: 0.0045 - mae: 0.0486

## [1m147/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 20m
s/step - loss: 0.0045 - mae: 0.0486

## [1m150/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0045 - mae: 0.0486

## [1m153/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0045 - mae: 0.0486

## [1m156/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0045 - mae: 0.0486

## [1m159/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0045 - mae: 0.0486

## [1m162/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0045 - mae: 0.0486

## [1m165/297[0m [32m━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0045 - mae: 0.0485

## [1m168/297[0m [32m━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0045 - mae: 0.0485

## [1m171/297[0m [32m━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0045 - mae: 0.0485

## [1m174/297[0m [32m━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0045 - mae: 0.0485
```

```
## [1m177/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0045 - mae: 0.0485

## [1m180/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0045 - mae: 0.0485

## [1m183/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0045 - mae: 0.0485

## [1m186/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0045 - mae: 0.0485

## [1m189/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0045 - mae: 0.0485

## [1m192/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0045 - mae: 0.0485

## [1m195/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0045 - mae: 0.0485

## [1m198/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0045 - mae: 0.0485

## [1m201/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0045 - mae: 0.0485

## [1m204/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0045 - mae: 0.0485

## [1m207/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0045 - mae: 0.0485

## [1m210/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0045 - mae: 0.0485

## [1m213/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0045 - mae: 0.0485

## [1m216/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485

## [1m219/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485

## [1m222/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485

## [1m225/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485

## [1m228/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485

## [1m231/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485

## [1m234/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485
```

```
## [1m237/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485

## [1m240/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485

## [1m243/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485

## [1m246/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485

## [1m249/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485

## [1m252/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485

## [1m255/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485

## [1m258/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485

## [1m261/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485

## [1m264/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485

## [1m267/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485

## [1m270/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485

## [1m273/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485

## [1m276/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485

## [1m279/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485

## [1m282/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485

## [1m285/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485

## [1m288/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485

## [1m291/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485

## [1m294/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485
```

```
## [1m297/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0485

## [1m297/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m[0m [1m7s[0m 25m
s/step - loss: 0.0046 - mae: 0.0485 - val_loss: 0.0061 - val_mae: 0.0574

## Epoch 17/20

##

## [1m  1/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m27s[0m 94ms/step
- loss: 0.0084 - mae: 0.0681

## [1m  3/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m9s[0m 32ms/step
- loss: 0.0074 - mae: 0.0607

## [1m  6/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m7s[0m 27ms/step
- loss: 0.0066 - mae: 0.0573

## [1m  9/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m7s[0m 25ms/step
- loss: 0.0061 - mae: 0.0555

## [1m 12/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 24ms/step
- loss: 0.0058 - mae: 0.0542

## [1m 15/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23m
s/step - loss: 0.0056 - mae: 0.0532

## [1m 18/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23m
s/step - loss: 0.0055 - mae: 0.0526

## [1m 21/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22m
s/step - loss: 0.0054 - mae: 0.0523

## [1m 24/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22m
s/step - loss: 0.0054 - mae: 0.0521

## [1m 27/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0055 - mae: 0.0520

## [1m 30/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0055 - mae: 0.0519

## [1m 33/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0055 - mae: 0.0517

## [1m 36/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0055 - mae: 0.0516

## [1m 39/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0055 - mae: 0.0516

## [1m 42/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0055 - mae: 0.0515

## [1m 45/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0055 - mae: 0.0515

## [1m 48/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0054 - mae: 0.0514
```

```
## [1m 51/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0054 - mae: 0.0513

## [1m 54/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0054 - mae: 0.0513

## [1m 57/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0054 - mae: 0.0512

## [1m 60/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0054 - mae: 0.0512

## [1m 63/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0054 - mae: 0.0512

## [1m 66/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0054 - mae: 0.0511

## [1m 69/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0054 - mae: 0.0511

## [1m 72/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0054 - mae: 0.0510

## [1m 75/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0054 - mae: 0.0510

## [1m 78/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0054 - mae: 0.0509

## [1m 81/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0053 - mae: 0.0508

## [1m 84/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0053 - mae: 0.0508

## [1m 87/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0053 - mae: 0.0507

## [1m 90/297[0m [32m━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0053 - mae: 0.0507

## [1m 93/297[0m [32m━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0053 - mae: 0.0506

## [1m 96/297[0m [32m━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0053 - mae: 0.0506

## [1m 99/297[0m [32m━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0053 - mae: 0.0506

## [1m102/297[0m [32m━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0053 - mae: 0.0505

## [1m105/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0053 - mae: 0.0505

## [1m108/297[0m [32m━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0053 - mae: 0.0504
```

```
## [1m111/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0053 - mae: 0.0504

## [1m114/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0504

## [1m117/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0503

## [1m120/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0503

## [1m123/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0503

## [1m126/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0502

## [1m129/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0502

## [1m132/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0502

## [1m135/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0501

## [1m138/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0501

## [1m141/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0501

## [1m144/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0500

## [1m147/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0500

## [1m150/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0500

## [1m153/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0052 - mae: 0.0500

## [1m156/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0500

## [1m159/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0499

## [1m162/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0499

## [1m165/297[0m [32m━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0499

## [1m168/297[0m [32m━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0499
```

```
## [1m171/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0499

## [1m174/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0499

## [1m177/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0498

## [1m180/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0498

## [1m183/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0498

## [1m186/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0498

## [1m189/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0498

## [1m192/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0497

## [1m195/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0497

## [1m198/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0497

## [1m201/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0051 - mae: 0.0497

## [1m204/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0497

## [1m207/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0497

## [1m210/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0497

## [1m213/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0496

## [1m216/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0496

## [1m219/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0051 - mae: 0.0496

## [1m222/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0050 - mae: 0.0496

## [1m225/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0050 - mae: 0.0496

## [1m228/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0050 - mae: 0.0496
```

```
## [1m231/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0050 - mae: 0.0496

## [1m234/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0050 - mae: 0.0496

## [1m237/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0050 - mae: 0.0496

## [1m240/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0050 - mae: 0.0495

## [1m243/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0050 - mae: 0.0495

## [1m246/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0050 - mae: 0.0495

## [1m249/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0050 - mae: 0.0495

## [1m252/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0495

## [1m255/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0495

## [1m258/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0495

## [1m261/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0495

## [1m264/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0495

## [1m267/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0495

## [1m270/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0495

## [1m273/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0494

## [1m276/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0494

## [1m279/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0494

## [1m282/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0494

## [1m285/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0494

## [1m288/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0494
```

```
## [1m291/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0494

## [1m294/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0494

## [1m297/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m[0m [1m0s[0m 21m
s/step - loss: 0.0050 - mae: 0.0494

## [1m297/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m[0m [1m7s[0m 24m
s/step - loss: 0.0050 - mae: 0.0494 - val_loss: 0.0062 - val_mae: 0.0573

## Epoch 18/20

##

## [1m  1/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m26s[0m 91ms/step
- loss: 0.0019 - mae: 0.0375

## [1m  3/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m9s[0m 32ms/step
- loss: 0.0037 - mae: 0.0410

## [1m  6/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m7s[0m 26ms/step
- loss: 0.0044 - mae: 0.0426

## [1m  9/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 24ms/step
- loss: 0.0045 - mae: 0.0432

## [1m 12/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23ms/step
- loss: 0.0048 - mae: 0.0445

## [1m 15/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22m
s/step - loss: 0.0050 - mae: 0.0453

## [1m 18/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22m
s/step - loss: 0.0051 - mae: 0.0458

## [1m 21/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22m
s/step - loss: 0.0051 - mae: 0.0461

## [1m 24/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0052 - mae: 0.0464

## [1m 27/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0052 - mae: 0.0467

## [1m 30/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0052 - mae: 0.0468

## [1m 33/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0052 - mae: 0.0470

## [1m 36/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0052 - mae: 0.0471

## [1m 39/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0052 - mae: 0.0472

## [1m 42/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0052 - mae: 0.0474
```

```
## [1m 45/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0051 - mae: 0.0475

## [1m 48/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0051 - mae: 0.0476

## [1m 51/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0051 - mae: 0.0477

## [1m 54/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0051 - mae: 0.0478

## [1m 57/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0051 - mae: 0.0479

## [1m 60/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0051 - mae: 0.0479

## [1m 63/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0051 - mae: 0.0480

## [1m 66/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0051 - mae: 0.0481

## [1m 69/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0051 - mae: 0.0482

## [1m 72/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0051 - mae: 0.0482

## [1m 75/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0051 - mae: 0.0482

## [1m 78/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0483

## [1m 81/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0483

## [1m 84/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0483

## [1m 87/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0483

## [1m 90/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0484

## [1m 93/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0484

## [1m 96/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0484

## [1m 99/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0484

## [1m102/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0485
```

```
## [1m105/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0050 - mae: 0.0485

## [1m108/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0050 - mae: 0.0485

## [1m111/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0050 - mae: 0.0485

## [1m114/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0050 - mae: 0.0485

## [1m117/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0050 - mae: 0.0486

## [1m120/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0050 - mae: 0.0486

## [1m123/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0050 - mae: 0.0486

## [1m126/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0050 - mae: 0.0486

## [1m129/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0050 - mae: 0.0486

## [1m132/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0050 - mae: 0.0486

## [1m135/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0050 - mae: 0.0486

## [1m138/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0487

## [1m141/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0487

## [1m144/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0487

## [1m147/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0487

## [1m150/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0487

## [1m153/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0049 - mae: 0.0487

## [1m156/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0487

## [1m159/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0487

## [1m162/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0487
```

```
## [1m165/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0487

## [1m168/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0487

## [1m171/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0487

## [1m174/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0487

## [1m177/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0487

## [1m180/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0488

## [1m183/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0488

## [1m186/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0488

## [1m189/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0488

## [1m192/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0488

## [1m195/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0488

## [1m198/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0049 - mae: 0.0488

## [1m201/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0049 - mae: 0.0488

## [1m204/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0049 - mae: 0.0488

## [1m207/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0049 - mae: 0.0488

## [1m210/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0049 - mae: 0.0488

## [1m213/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0049 - mae: 0.0488

## [1m216/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0049 - mae: 0.0488

## [1m219/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0049 - mae: 0.0489

## [1m222/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0049 - mae: 0.0489
```

```
## [1m225/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0049 - mae: 0.0489

## [1m228/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0049 - mae: 0.0489

## [1m231/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0049 - mae: 0.0489

## [1m234/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0049 - mae: 0.0489

## [1m237/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0049 - mae: 0.0489

## [1m240/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0049 - mae: 0.0489

## [1m243/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0049 - mae: 0.0489

## [1m246/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0049 - mae: 0.0489

## [1m249/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0489

## [1m252/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0489

## [1m255/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0489

## [1m258/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0489

## [1m261/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0489

## [1m264/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0489

## [1m267/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0489

## [1m270/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0489

## [1m273/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0489

## [1m276/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0489

## [1m279/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0489

## [1m282/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0489
```

```
## [1m285/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0489

## [1m288/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0489

## [1m291/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0489

## [1m294/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0489

## [1m297/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m[0m [1m0s[0m 21m
s/step - loss: 0.0049 - mae: 0.0489

## [1m297/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m[0m [1m7s[0m 24m
s/step - loss: 0.0049 - mae: 0.0489 - val_loss: 0.0058 - val_mae: 0.0553

## Epoch 19/20

##

## [1m  1/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m27s[0m 94ms/step
- loss: 0.0051 - mae: 0.0458

## [1m  3/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m10s[0m 37ms/step
- loss: 0.0045 - mae: 0.0439

## [1m  5/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m9s[0m 33ms/step
- loss: 0.0046 - mae: 0.0458

## [1m  8/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m8s[0m 28ms/step
- loss: 0.0046 - mae: 0.0465

## [1m 11/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m7s[0m 26ms/step
- loss: 0.0045 - mae: 0.0463

## [1m 14/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m7s[0m 25ms/step
- loss: 0.0045 - mae: 0.0465

## [1m 17/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 24m
s/step - loss: 0.0046 - mae: 0.0468

## [1m 20/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 24m
s/step - loss: 0.0046 - mae: 0.0472

## [1m 23/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23m
s/step - loss: 0.0046 - mae: 0.0475

## [1m 26/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23m
s/step - loss: 0.0046 - mae: 0.0476

## [1m 29/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22m
s/step - loss: 0.0046 - mae: 0.0478

## [1m 32/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0046 - mae: 0.0479

## [1m 35/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0046 - mae: 0.0479
```

```
## [1m 38/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0046 - mae: 0.0479

## [1m 41/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0046 - mae: 0.0479

## [1m 44/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0046 - mae: 0.0479

## [1m 47/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0046 - mae: 0.0479

## [1m 50/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0046 - mae: 0.0479

## [1m 53/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0046 - mae: 0.0480

## [1m 56/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0046 - mae: 0.0480

## [1m 59/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0046 - mae: 0.0480

## [1m 62/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0046 - mae: 0.0480

## [1m 65/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0046 - mae: 0.0480

## [1m 68/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0046 - mae: 0.0481

## [1m 71/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0046 - mae: 0.0481

## [1m 74/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0047 - mae: 0.0481

## [1m 77/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0047 - mae: 0.0482

## [1m 80/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0047 - mae: 0.0482

## [1m 83/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0047 - mae: 0.0482

## [1m 86/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0047 - mae: 0.0482

## [1m 89/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0047 - mae: 0.0482

## [1m 92/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0047 - mae: 0.0483

## [1m 95/297[0m [32m━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0047 - mae: 0.0483
```

```
## [1m 98/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0047 - mae: 0.0483

## [1m101/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0047 - mae: 0.0483

## [1m104/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0047 - mae: 0.0483

## [1m107/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0047 - mae: 0.0483

## [1m110/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0047 - mae: 0.0484

## [1m113/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0047 - mae: 0.0484

## [1m116/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0047 - mae: 0.0484

## [1m119/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0047 - mae: 0.0484

## [1m122/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0047 - mae: 0.0484

## [1m125/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0047 - mae: 0.0484

## [1m128/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0047 - mae: 0.0484

## [1m131/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0047 - mae: 0.0484

## [1m134/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0047 - mae: 0.0484

## [1m137/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0047 - mae: 0.0484

## [1m140/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0047 - mae: 0.0483

## [1m143/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0047 - mae: 0.0483

## [1m146/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0047 - mae: 0.0483

## [1m149/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0047 - mae: 0.0483

## [1m152/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0047 - mae: 0.0483

## [1m155/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0047 - mae: 0.0483
```

```
## [1m158/297[0m [32m━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0047 - mae: 0.0483

## [1m161/297[0m [32m━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0047 - mae: 0.0483

## [1m164/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0047 - mae: 0.0483

## [1m167/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0047 - mae: 0.0483

## [1m170/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0047 - mae: 0.0483

## [1m173/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0047 - mae: 0.0483

## [1m176/297[0m [32m━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0047 - mae: 0.0483

## [1m179/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0047 - mae: 0.0483

## [1m182/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0047 - mae: 0.0483

## [1m185/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0047 - mae: 0.0483

## [1m188/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0047 - mae: 0.0483

## [1m191/297[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0047 - mae: 0.0483

## [1m194/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0047 - mae: 0.0483

## [1m197/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0047 - mae: 0.0483

## [1m200/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0047 - mae: 0.0483

## [1m203/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0047 - mae: 0.0483

## [1m206/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0047 - mae: 0.0483

## [1m209/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0047 - mae: 0.0483

## [1m212/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0047 - mae: 0.0483

## [1m215/297[0m [32m━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0047 - mae: 0.0484
```

```
## [1m218/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0047 - mae: 0.0484

## [1m221/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0047 - mae: 0.0484

## [1m224/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0047 - mae: 0.0484

## [1m227/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0047 - mae: 0.0484

## [1m230/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0047 - mae: 0.0484

## [1m233/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0047 - mae: 0.0484

## [1m236/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0047 - mae: 0.0484

## [1m239/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0047 - mae: 0.0484

## [1m242/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0047 - mae: 0.0484

## [1m245/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0047 - mae: 0.0484

## [1m248/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0047 - mae: 0.0484

## [1m251/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0047 - mae: 0.0484

## [1m254/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0047 - mae: 0.0484

## [1m257/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0047 - mae: 0.0484

## [1m260/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0047 - mae: 0.0484

## [1m263/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0047 - mae: 0.0484

## [1m266/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0047 - mae: 0.0484

## [1m269/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0047 - mae: 0.0484

## [1m272/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0047 - mae: 0.0484

## [1m275/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0047 - mae: 0.0484
```

```
## [1m278/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0047 - mae: 0.0485

## [1m281/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0047 - mae: 0.0485

## [1m284/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 21m
s/step - loss: 0.0047 - mae: 0.0485

## [1m287/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 21m
s/step - loss: 0.0047 - mae: 0.0485

## [1m290/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 21m
s/step - loss: 0.0047 - mae: 0.0485

## [1m293/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 21m
s/step - loss: 0.0047 - mae: 0.0485

## [1m296/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 21m
s/step - loss: 0.0047 - mae: 0.0485

## [1m297/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m[0m [1m7s[0m 24m
s/step - loss: 0.0047 - mae: 0.0485 - val_loss: 0.0057 - val_mae: 0.0548

## Epoch 20/20

##

## [1m  1/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m35s[0m 120ms/ste
p - loss: 0.0033 - mae: 0.0460

## [1m  3/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m10s[0m 34ms/step
- loss: 0.0038 - mae: 0.0480

## [1m  6/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m8s[0m 28ms/step
- loss: 0.0039 - mae: 0.0484

## [1m  9/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m7s[0m 25ms/step
- loss: 0.0038 - mae: 0.0475

## [1m 12/297[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 24ms/step
- loss: 0.0039 - mae: 0.0474

## [1m 15/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23m
s/step - loss: 0.0040 - mae: 0.0474

## [1m 18/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 23m
s/step - loss: 0.0040 - mae: 0.0475

## [1m 21/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m6s[0m 22m
s/step - loss: 0.0041 - mae: 0.0475

## [1m 24/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0041 - mae: 0.0476

## [1m 27/297[0m [32m━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 22m
s/step - loss: 0.0041 - mae: 0.0477

## [1m 30/297[0m [32m━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0041 - mae: 0.0478
```

```
## [1m 33/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0042 - mae: 0.0479

## [1m 36/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0042 - mae: 0.0480

## [1m 39/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0042 - mae: 0.0481

## [1m 42/297[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0042 - mae: 0.0482

## [1m 45/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0043 - mae: 0.0483

## [1m 48/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0043 - mae: 0.0483

## [1m 51/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0043 - mae: 0.0484

## [1m 54/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m5s[0m 21m
s/step - loss: 0.0043 - mae: 0.0484

## [1m 57/297[0m [32m━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0043 - mae: 0.0485

## [1m 60/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0043 - mae: 0.0485

## [1m 63/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0043 - mae: 0.0486

## [1m 66/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0043 - mae: 0.0486

## [1m 69/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0044 - mae: 0.0486

## [1m 72/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0044 - mae: 0.0486

## [1m 75/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0044 - mae: 0.0486

## [1m 78/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0044 - mae: 0.0486

## [1m 81/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0044 - mae: 0.0486

## [1m 84/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0044 - mae: 0.0486

## [1m 87/297[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0044 - mae: 0.0487

## [1m 90/297[0m [32m━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0044 - mae: 0.0487
```

```
## [1m 93/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0044 - mae: 0.0487

## [1m 96/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0044 - mae: 0.0487

## [1m 99/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0044 - mae: 0.0487

## [1m102/297[0m [32m━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m4s[0m 21m
s/step - loss: 0.0044 - mae: 0.0488

## [1m105/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0488

## [1m108/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0488

## [1m111/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0488

## [1m114/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0488

## [1m117/297[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0488

## [1m120/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0488

## [1m123/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0488

## [1m126/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0488

## [1m129/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0488

## [1m132/297[0m [32m━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0044 - mae: 0.0488

## [1m135/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0045 - mae: 0.0489

## [1m138/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0045 - mae: 0.0489

## [1m141/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0045 - mae: 0.0489

## [1m144/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0045 - mae: 0.0489

## [1m147/297[0m [32m━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0045 - mae: 0.0489

## [1m150/297[0m [32m━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m3s[0m 21m
s/step - loss: 0.0045 - mae: 0.0489
```

```
## [1m153/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0045 - mae: 0.0489

## [1m156/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0045 - mae: 0.0489

## [1m159/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 21m
s/step - loss: 0.0045 - mae: 0.0489

## [1m162/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0045 - mae: 0.0489

## [1m165/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0045 - mae: 0.0489

## [1m168/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0045 - mae: 0.0489

## [1m171/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0045 - mae: 0.0489

## [1m174/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0045 - mae: 0.0489

## [1m177/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0045 - mae: 0.0490

## [1m180/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0045 - mae: 0.0490

## [1m183/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0045 - mae: 0.0490

## [1m186/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0045 - mae: 0.0490

## [1m189/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0045 - mae: 0.0490

## [1m192/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0045 - mae: 0.0490

## [1m195/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0045 - mae: 0.0490

## [1m198/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m2s[0m 20m
s/step - loss: 0.0045 - mae: 0.0490

## [1m201/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0045 - mae: 0.0490

## [1m204/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0045 - mae: 0.0490

## [1m207/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0045 - mae: 0.0490

## [1m210/297[0m [32m━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0045 - mae: 0.0490
```

```
## [1m213/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0045 - mae: 0.0490

## [1m216/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0045 - mae: 0.0490

## [1m219/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0045 - mae: 0.0490

## [1m222/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0046 - mae: 0.0491

## [1m225/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0046 - mae: 0.0491

## [1m228/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 20m
s/step - loss: 0.0046 - mae: 0.0491

## [1m231/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0046 - mae: 0.0491

## [1m234/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0046 - mae: 0.0491

## [1m237/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0046 - mae: 0.0491

## [1m240/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0046 - mae: 0.0491

## [1m243/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0046 - mae: 0.0492

## [1m246/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m1s[0m 21m
s/step - loss: 0.0046 - mae: 0.0492

## [1m249/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0492

## [1m252/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0492

## [1m255/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0492

## [1m258/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0492

## [1m261/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0492

## [1m264/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0492

## [1m267/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0492

## [1m270/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0492
```

```
## [1m273/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0492

## [1m276/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0492

## [1m279/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0492

## [1m282/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━━━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0493

## [1m285/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0493

## [1m288/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0493

## [1m291/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 20m
s/step - loss: 0.0046 - mae: 0.0493

## [1m294/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 21m
s/step - loss: 0.0046 - mae: 0.0493

## [1m297/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m[0m [1m0s[0m 20m
s/step - loss: 0.0046 - mae: 0.0493

## [1m297/297[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m[0m [1m7s[0m 24m
s/step - loss: 0.0046 - mae: 0.0493 - val_loss: 0.0063 - val_mae: 0.0588

## <keras.src.callbacks.history.History object at 0x000001CCEDCCD310>
```

```
# Generate predictions

y_pred = model.predict(X_test)
```

```
##

## [1m 1/75[0m [37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m55s[0m 753ms/step

## [1m 8/75[0m [32m━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m0s[0m 8ms/s
tep

## [1m16/75[0m [32m━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m0s[0m 7ms/s
tep

## [1m25/75[0m [32m━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━━━━[0m [1m0s[0m 7ms/s
tep

## [1m34/75[0m [32m━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━━━━[0m [1m0s[0m 6ms/s
tep

## [1m43/75[0m [32m━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━━━━[0m [1m0s[0m 6ms/s
tep

## [1m52/75[0m [32m━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━━━━[0m [1m0s[0m 6ms/s
tep

## [1m62/75[0m [32m━━━━━━━━━━━━━━━━━━━[0m[37m━━━━━━━━━━━━━━[0m [1m0s[0m 6ms/s
tep
```

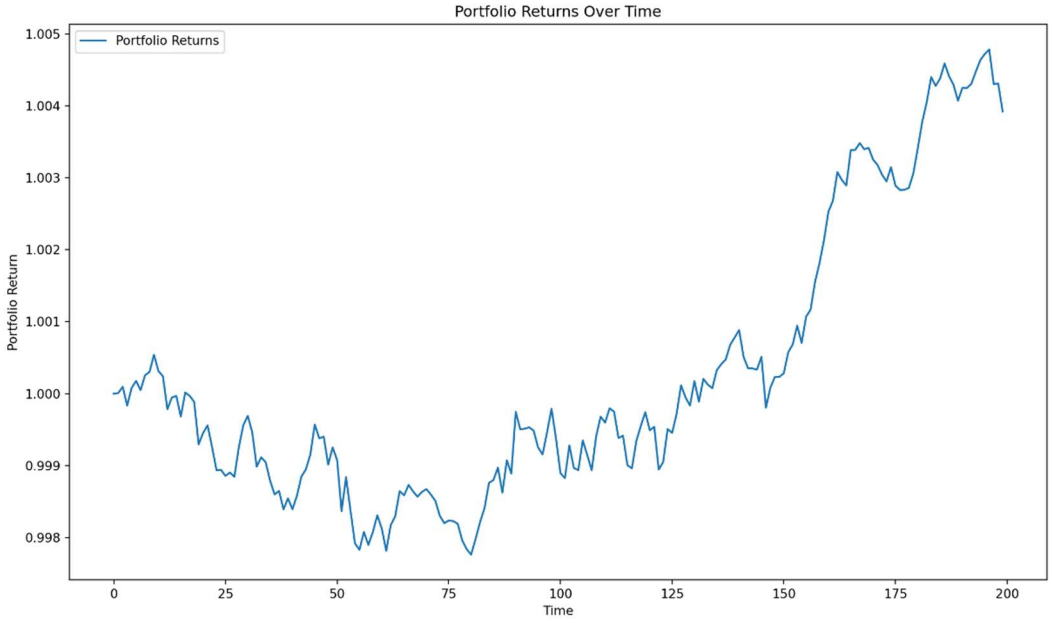
```
## [1m72/75[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m━[0m [1m0s[0m 6ms/s
tep

## [1m75/75[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m[0m [1m0s[0m 16ms/
step

## [1m75/75[0m [32m━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━[0m[37m[0m [1m2s[0m 16ms/
step
```

```
# GBM simulation

mu, sigma, S0 = {}, {}, {}

simulations = {}

T = 1

steps = 252

n_simulations = 1000


for ticker, df in data.items():

    mu[ticker] = df["Log_Return"].mean()

    sigma[ticker] = df["Volatility"].mean()

    S0[ticker] = df["Close"].iloc[-1]

    simulations[ticker] = simulate_gbm(S0[ticker], mu[ticker], sigma[ticker],
T, steps, n_simulations)


# Backtest portfolio

portfolio_returns, portfolio_volatility, portfolio_weights, final_summary_df
= backtest_portfolio(

    data, y_pred, tickers, simulations)


# Display the consolidated DataFrame

print(final_summary_df)
```

```
##       Time      Portfolio Return  ...  Weight in GOOGL  Weight in TSM
## 0        1  [0.9999999552965164]  ...         0.200666       0.200539
## 1        2  [1.0000091051495115]  ...         0.200666       0.200539
## 2        3  [1.0000955810916148]  ...         0.200666       0.200539
## 3        4  [0.9998348396100765]  ...         0.200666       0.200539
## 4        5  [1.0000806075712005]  ...         0.200666       0.200539
## ..     ...                   ...  ...              ...            ...
## 248    249   [1.001309973618113]  ...         0.200017       0.199635
## 249    250  [1.0008250487955275]  ...         0.200017       0.199635
```

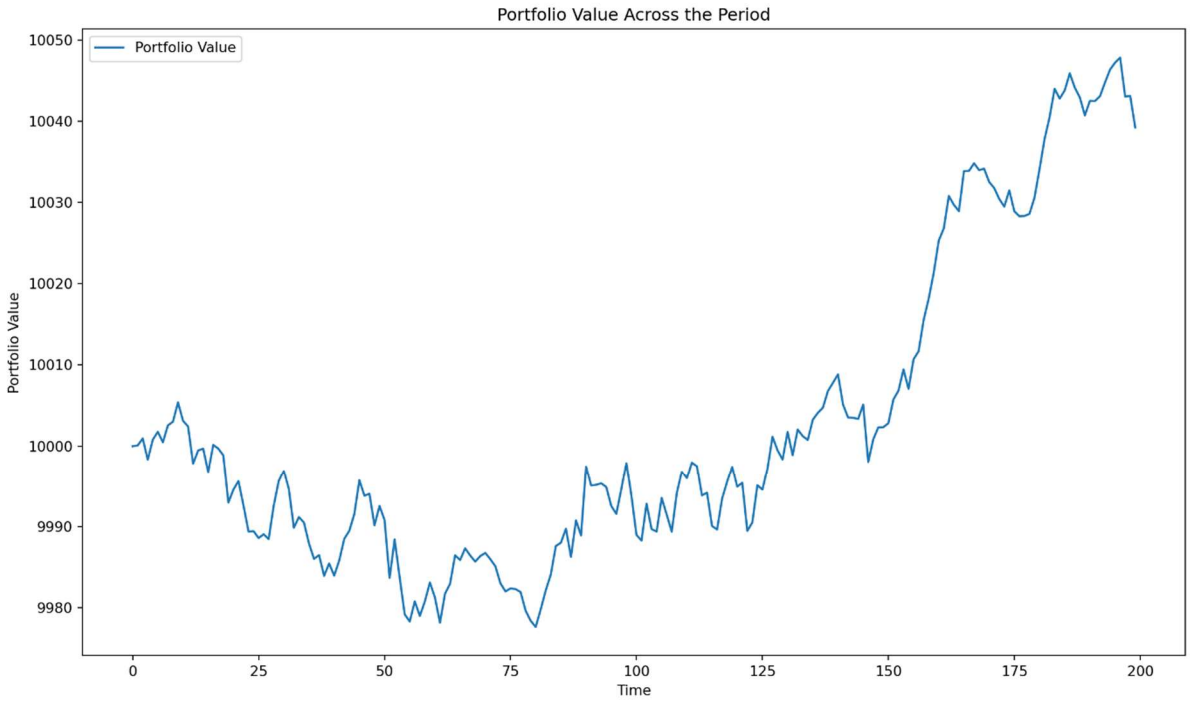
```
## 250   251  [1.0010130361271476]  ...         0.200676       0.201674
## 251   252  [1.0015094987500148]  ...         0.200676       0.201674
## 252   253  [1.0012717948763108]  ...         0.200676       0.201674
##
## [253 rows x 9 columns]
```

```
# Results visualization
plt.figure(figsize=(14, 8))
plt.plot(portfolio_returns[:200], label="Portfolio Returns")
plt.title("Portfolio Returns Over Time")
plt.xlabel("Time")
plt.ylabel("Portfolio Return")
plt.legend()
plt.show()
```

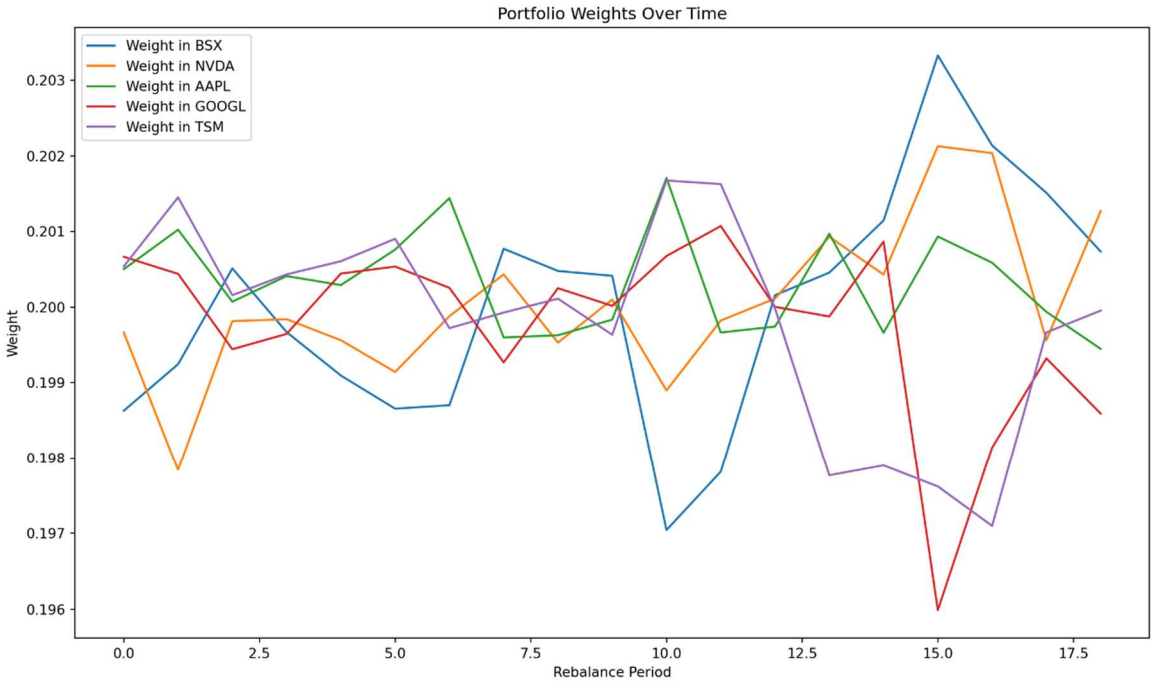



```
# Calculate portfolio value with initial investment 10K
AA = 10000 * portfolio_returns[:200]


# Results visualization
plt.figure(figsize=(14, 8))
plt.plot(AA, label="Portfolio Value")
```

```
plt.title("Portfolio Value Across the Period")
plt.xlabel("Time")
plt.ylabel("Portfolio Value")
plt.legend()
plt.show()
```




```
plt.figure(figsize=(14, 8))
for i, ticker in enumerate(tickers):
    plt.plot([w[i] for w in portfolio_weights], label=f"Weight in {ticker}")
plt.title("Portfolio Weights Over Time")
plt.xlabel("Rebalance Period")
plt.ylabel("Weight")
plt.legend()
plt.show()
```



Project improvement

LTSM architecture: Use deeper networks or multiple LSTM layers to capture more complex temporal dependencies.

Feature Engineering: Include additional features like moving averages, RSI, or Bollinger Bands as inputs to the LSTM to enhance its predictive power.

Implement a momentum threshold: Only consider assets with momentum scores above a certain value for inclusion in the portfolio. This avoids allocating capital to weak signals.

Alternative Momentum Metrics: Instead of traditional momentum, consider residual momentum (momentum after accounting for market and sector returns) to isolate idiosyncratic trends. Moreover, use seasonal patterns or periodic trends in returns as additional signals.

Weight optimization methods: Replace simple weight optimization with mean-variance optimization, Black-Litterman model, or minimum-variance portfolio to enhance diversification and returns. And explore non-linear optimization techniques like genetic algorithms or reinforcement learning for weight allocation.

Statistical Arbitrage: Combine pairs trading or cointegration strategies with momentum for market-neutral profits.

Factor-Based Investing: Incorporate value, size, or quality factors alongside momentum for multi-factor portfolios.

Market Regime Modeling: Identify market regimes (bull/bear/neutral) and switch between momentum and mean-reversion strategies based on the regime.