Weather Forecasting

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Outline

Research Problem

- Comparative Study of Statistical and Machine Learning Model
- Weather Istanbul Data 2009-2019

Literature Review

- Previous research used ARIMA and ANFIS models
- Weather Dataset Istanbul (2000-2008)
- Limited Research on using ES and SVM model on more recent data

How AI is solving this Problem?

- Machine Learning Techniques
- ARIMA
- Exponential Smoothing
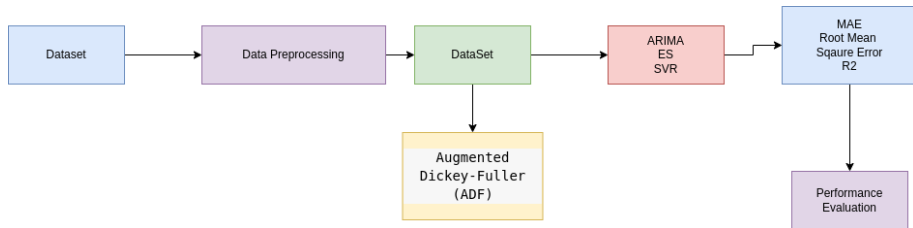- Support Vector Machine

Methodology

Figure: Methdology

Results

Model	MAE	RMSE	R2
ARIMA	3.520	5.225	-0.010
ES	9.304	9.576	-2.39
SVM	2.000	4.570	0.23

Benefits of this Research

- Improve the accuracy of short-term long-term weather prediction
- Streamlining Development Efforts
- Time and Resource Efficiency

Future Work

In the future work will apply these models:

- Neural Networks (e.g. LSTM, GRU) for time series prediction
- Prophet, a forecasting library developed by Facebook for time series prediction

References

1 Box,G.E.P. and G.M.Jenkins, 1976.Time Series Analysis : Forecasting and Control. Holden Day Inc. San Francisco,CA.