Purpose:

This project includes Data analysis and visualization of market sales and generating predictive model for forecasting the future sales which all of these conclusions could be handy in future purchases and sales management.

Challenges:

Developing a model which minimize the prediction error (RMSE, MAE)

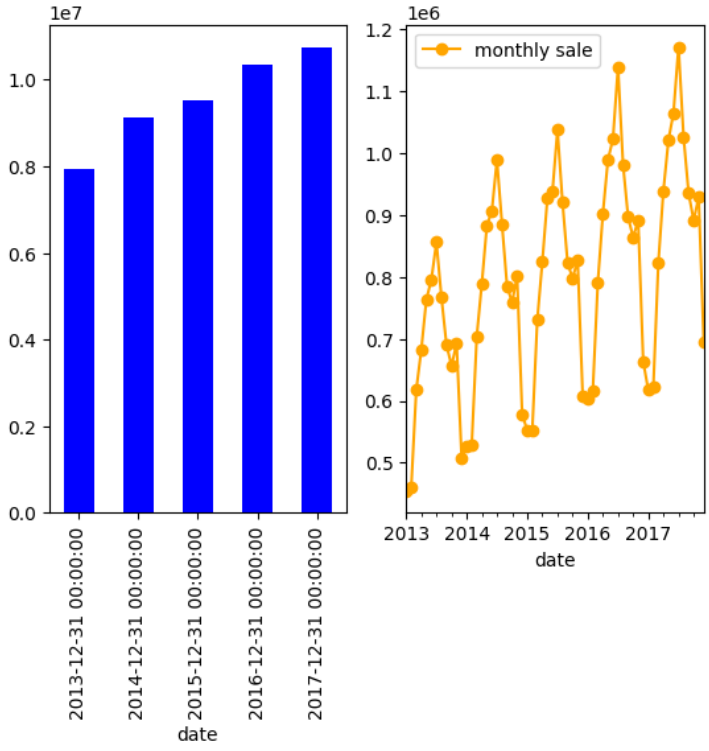
Approaches:

We use 3 different methods of prediction

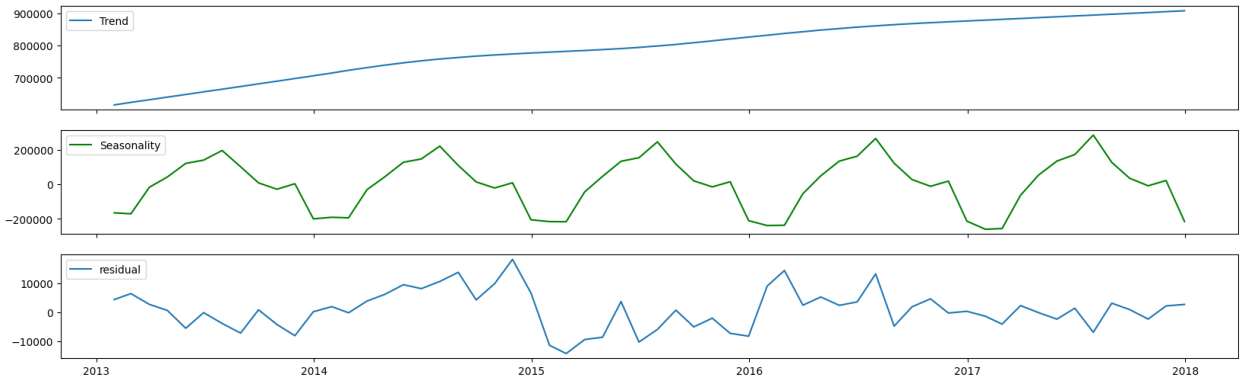
- Time series mode: Based on evident seasonality in the dataset SARIMA model
- Conventional machine learning model: linear Regression model and XGB Regressor
- Deep learning model: Long short-term memory (LSTM)

Result:

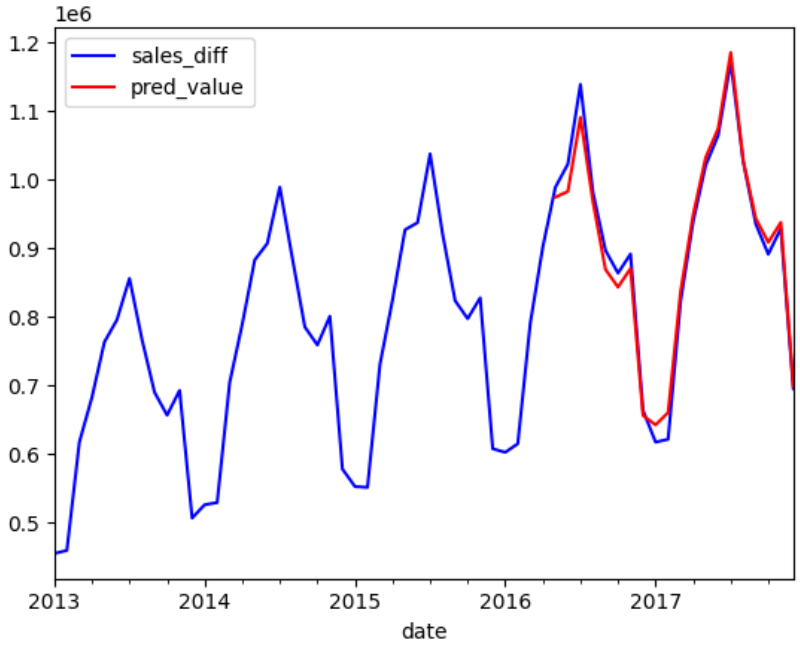
Summation of sales in years and month



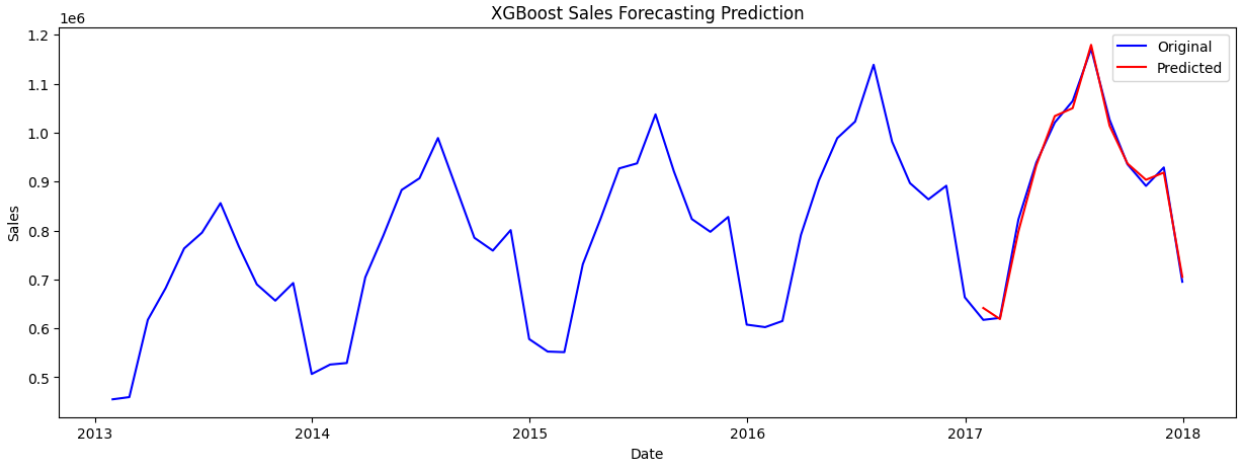
Checking Seasonality of data



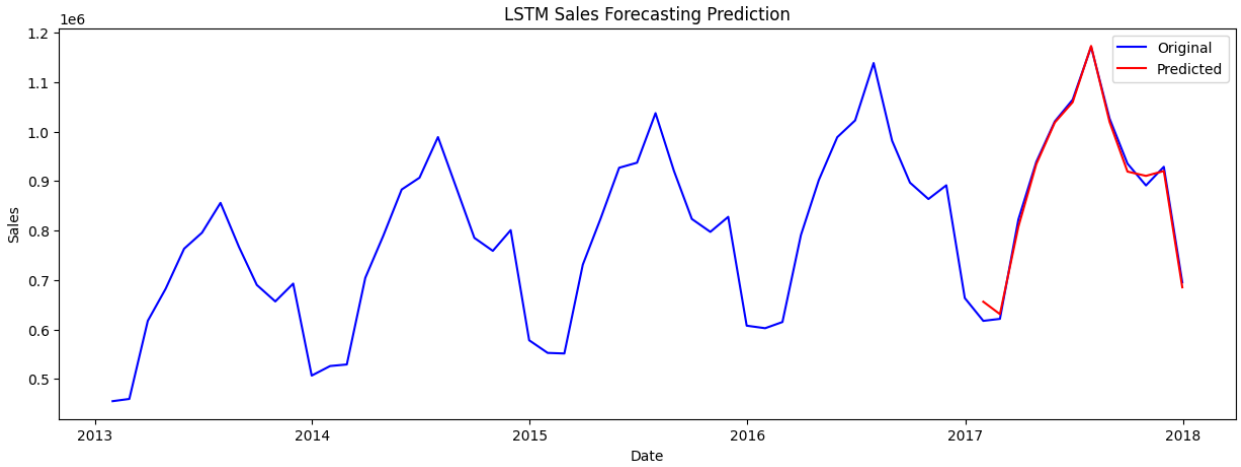
- Sarima results



- XGB regressor result



- LSTM result



Requirements:

Python packages:

- Pandas
- matplotlib
- Seaborn
- Statsmodel
- Scikit-learn
- Xgboost
- keras