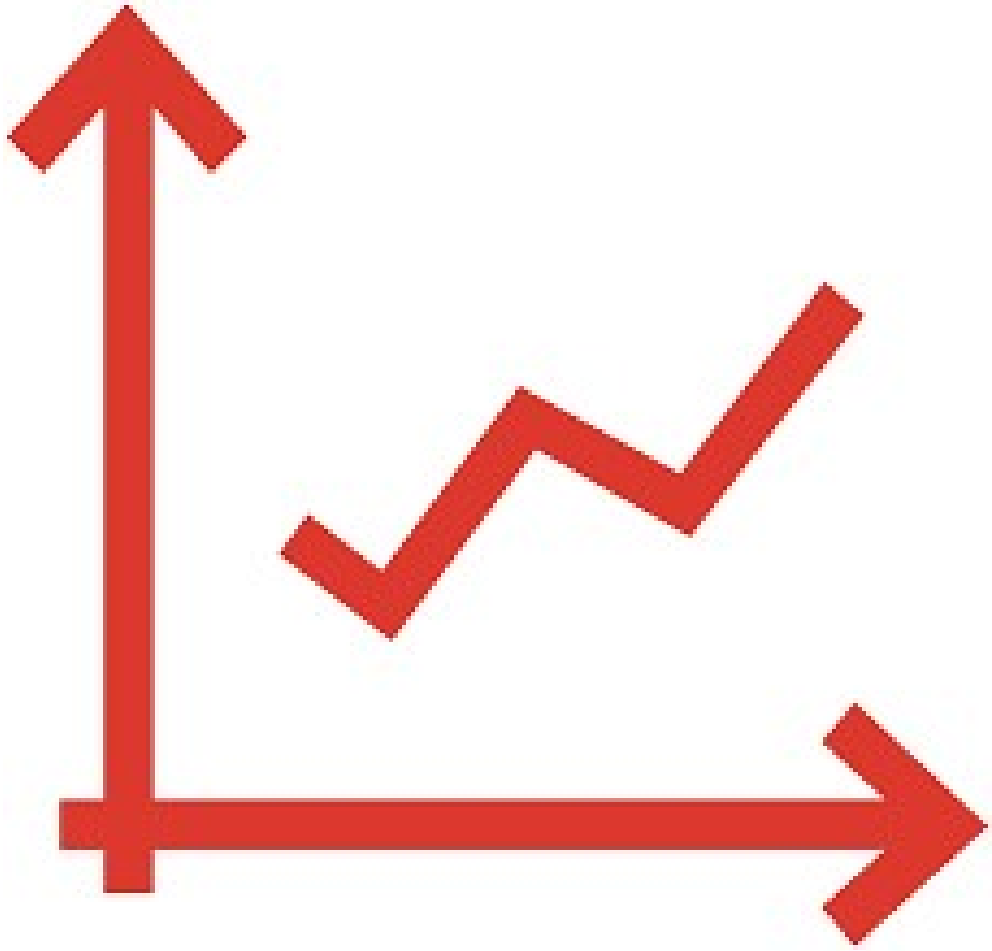
# Hungarian Chickenpox Cases Forecasting



Presented by Artem Ramus

# Background

Abstract: A spatio-temporal data set of weekly chickenpox cases from Hungary. The data set consists of a county-level adjacency matrix and time series of the county-level reported cases between 2005 and 2015.

Source:
Benedek Rozemberczki, The University of Edinburgh, benedek.rozemberczki '@' gmail.com

Link to hte dataset at UCI:
https://archive.ics.uci.edu/ml/datasets/Hungarian+Chickenpox+Cases

# Introduction

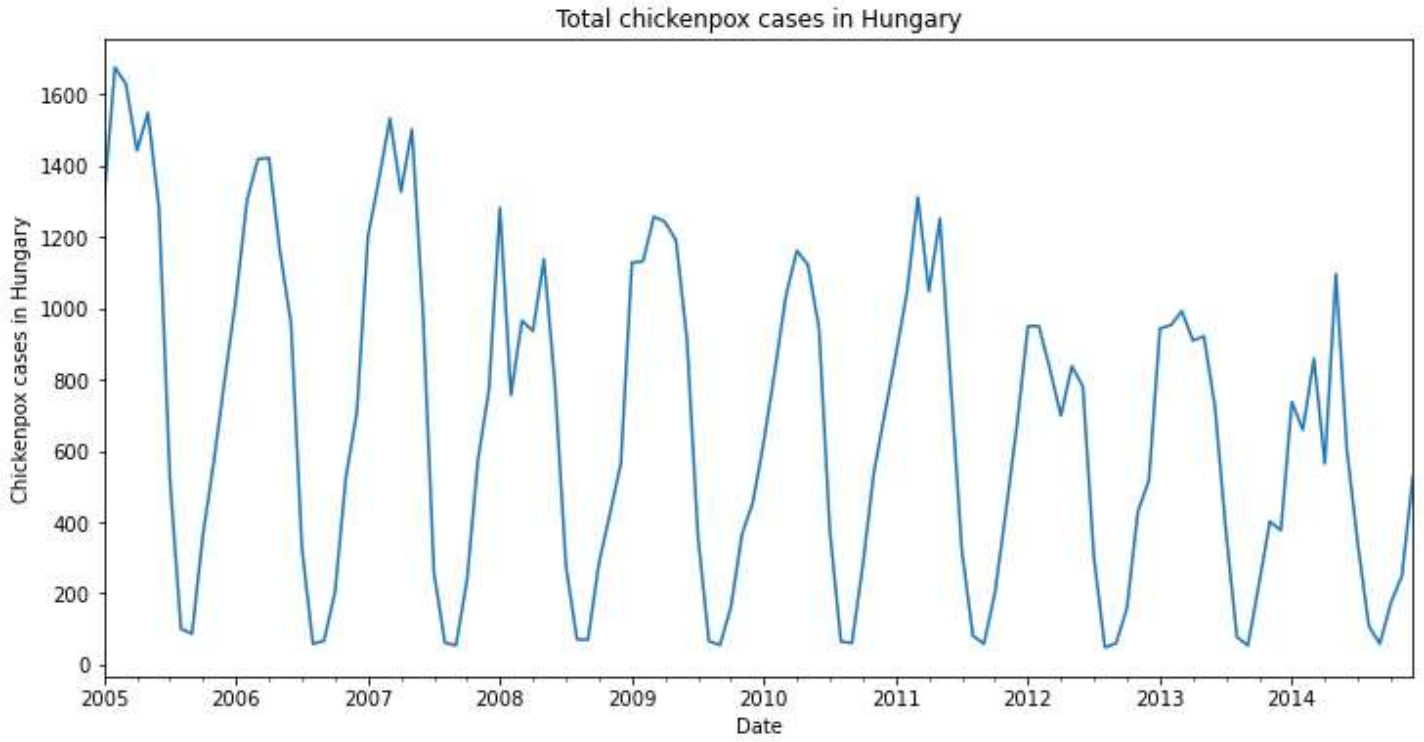
The dataset consists of a county-level adjacency matrix and time series of the county-level reported cases between 2005 and 2015. There are 2 specific related tasks: County level case count prediction and nation level case count prediction.

Attributes are weekly counts of chickenpox cases in Hungarian counties.

Data Set Characteristics: Time-Series
Number of Instances: 521
Area: Life
Attribute Characteristics: Real
Number of Attributes: 20

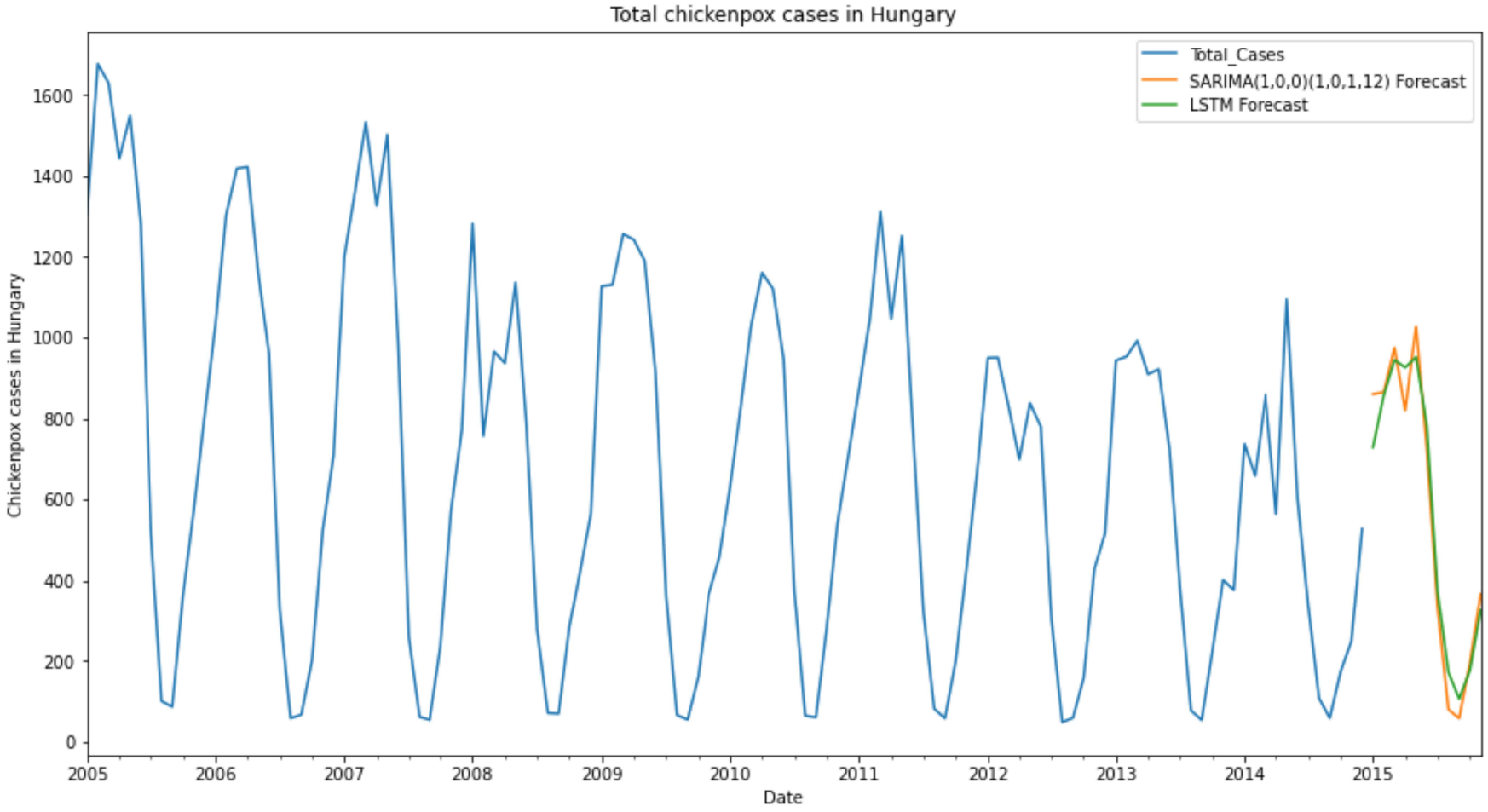
# Methodology

- The sampling was changed from weekly to monthly
- SARIMA and RNN LSTM models were trained on train-set
- 1 year prediction was made



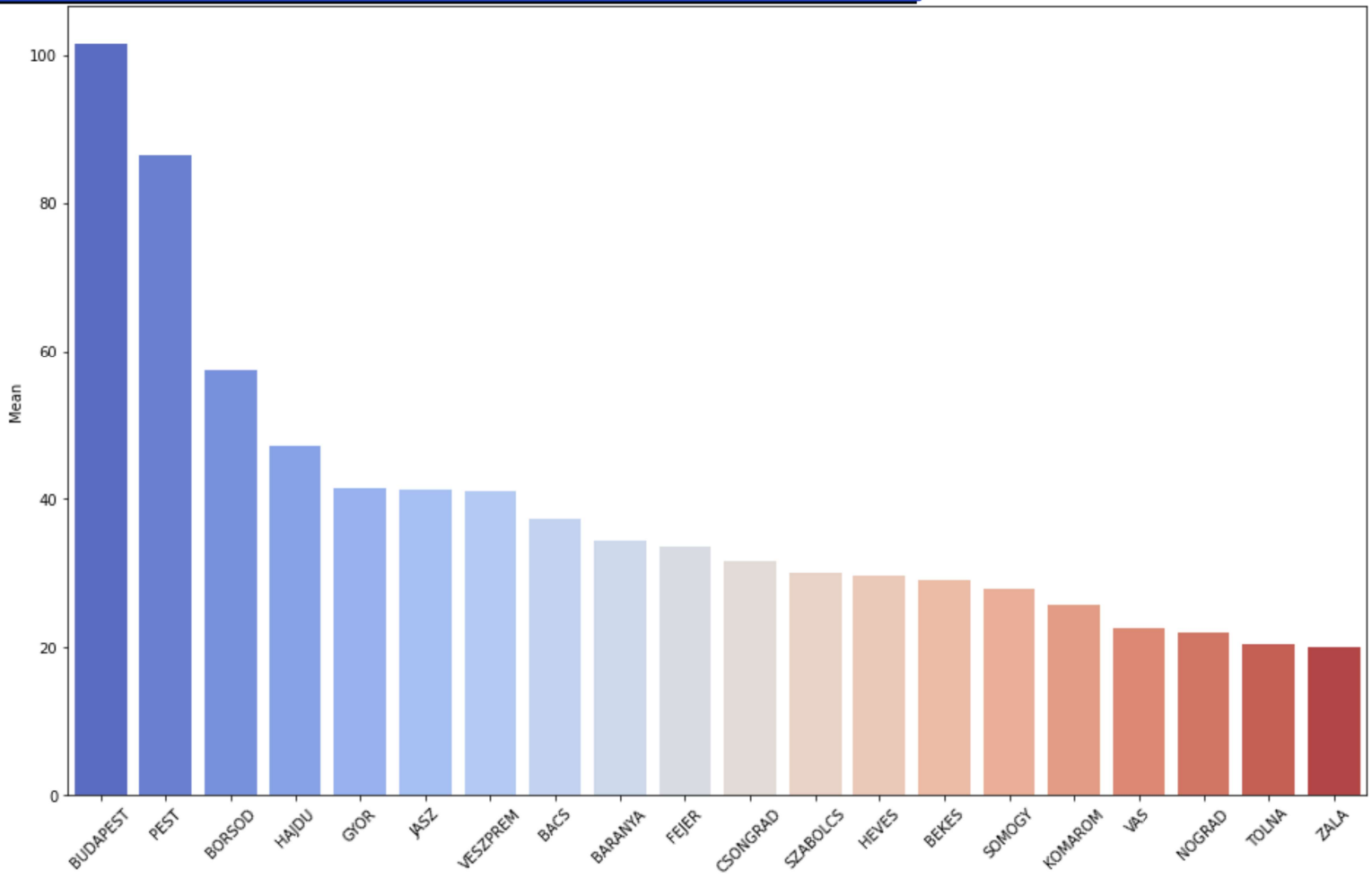
# Performance of the Model

Predictions along with the original data



# Exploratory Data Analysis

Distribution of the cases per areas in Hungary



# Summary and Conclusions

SARIMA and LSTM RNN showed similar performance

Budapest and Pest areas cases count is prominently higher than others

# The end

Thank you for your attention!