

ANÁLISE DE DADOS DO COVID-19

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Objetivo

- Analisar dados do COVID-19;
- Aplicar técnicas, metodologias e códigos vistos em aula;
- Trabalhar com dados reais.

Metodologia aplicada

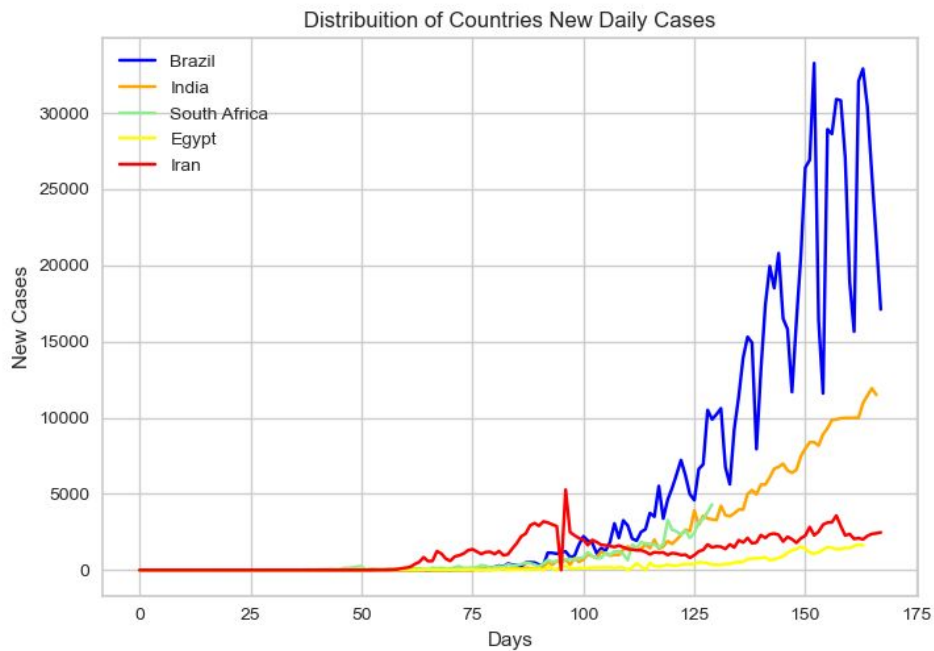
- Criação do dataset;
- Plots de visualização;
- Histogramas ajustados com PDF (GEV);
- Regressão linear;
- Classificação no espaço de Cullen e Frey;
- Modelo IMCSF-COVID19;
- SOC;
- LSTM.

Dataset

- Número de casos diários;
 - Número de mortes diárias;
 - Número de testes diários;
 - Número total de casos;
 - Número total de mortes;
 - Número total de testes.
- África do Sul;
 - Brasil;
 - Egito;
 - Índia;
 - Irã;
 - São José dos Campos;
 - São Paulo.

Visualização

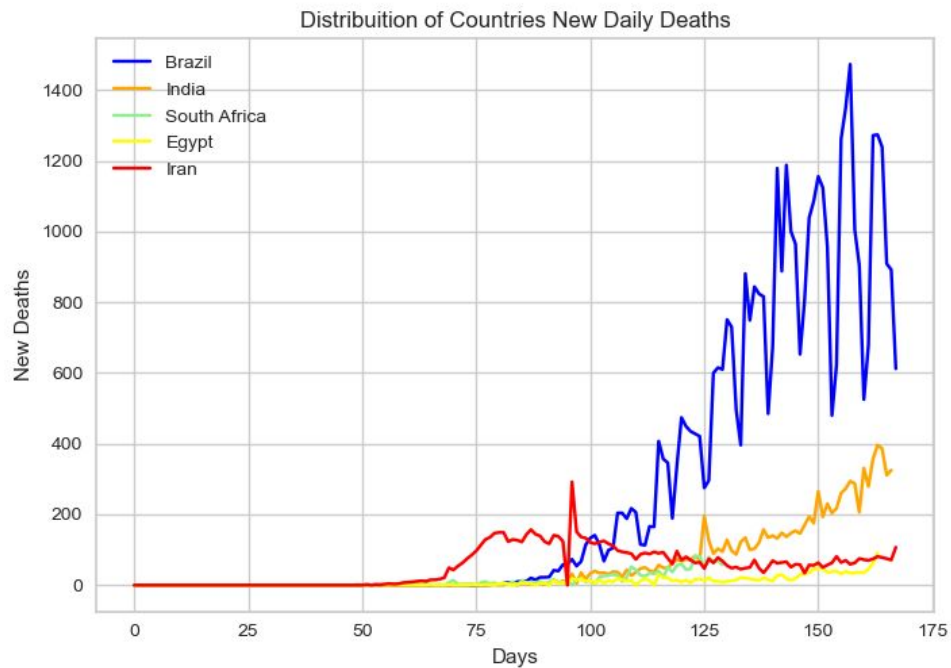
- Países
- ◆ Casos diários



Visualização

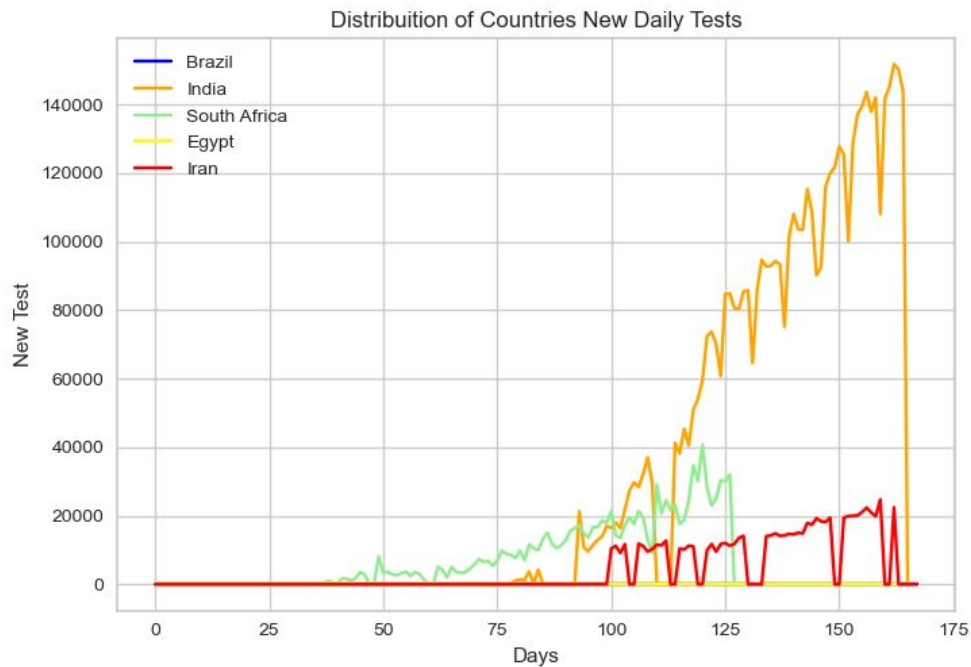
→ Países

◆ Mortes diárias



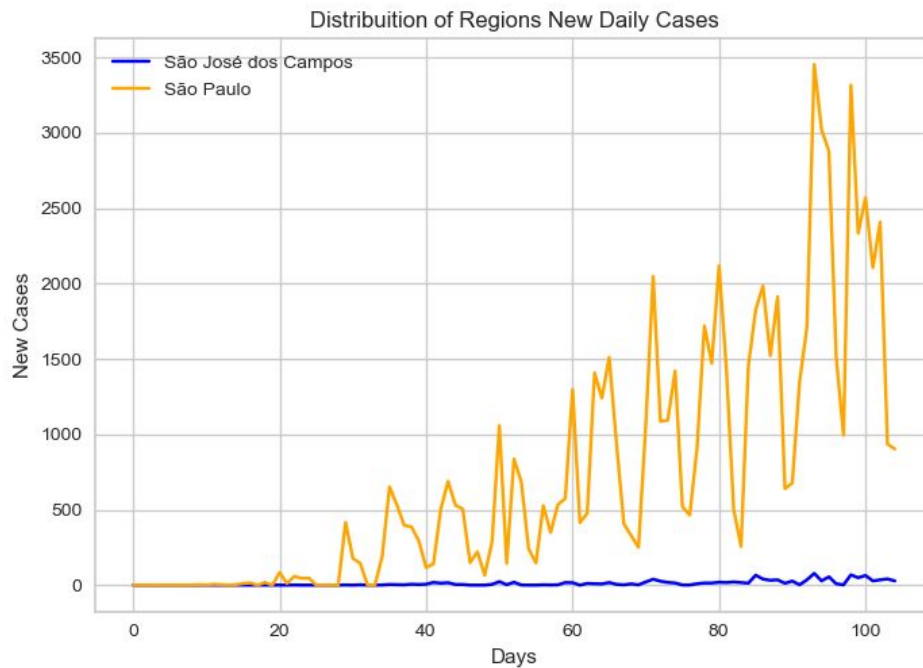
Visualização

- Países
- ◆ Testes diários



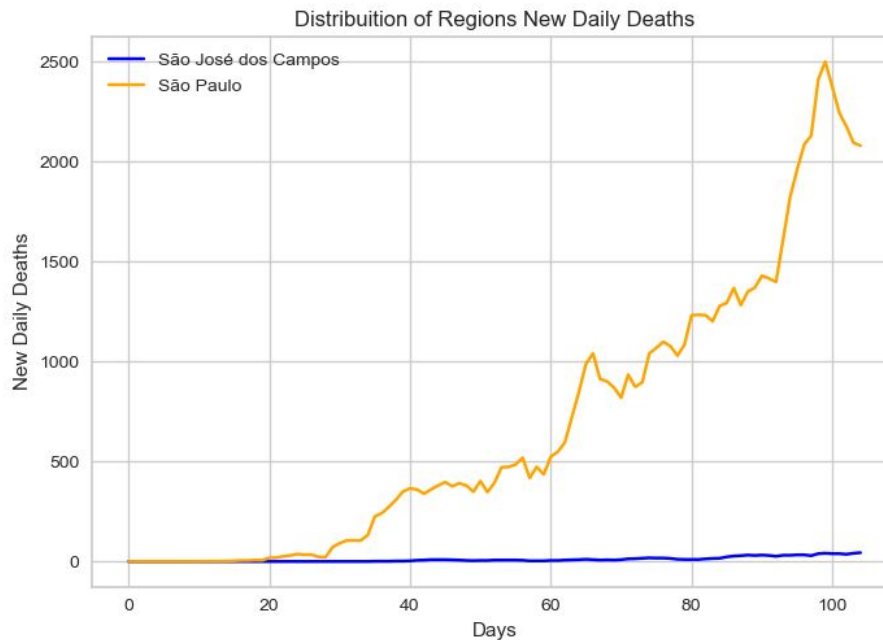
Visualização

- Regiões
- ◆ Casos diários



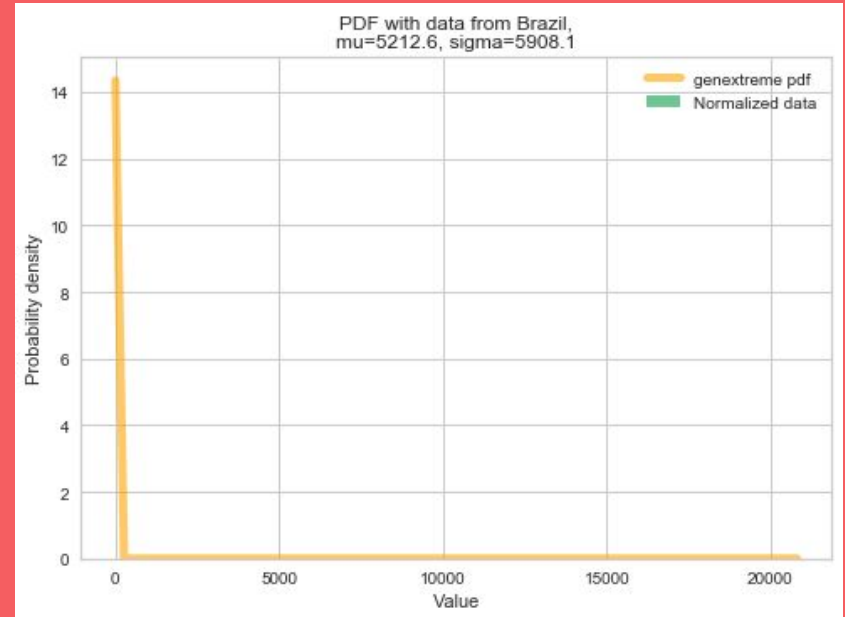
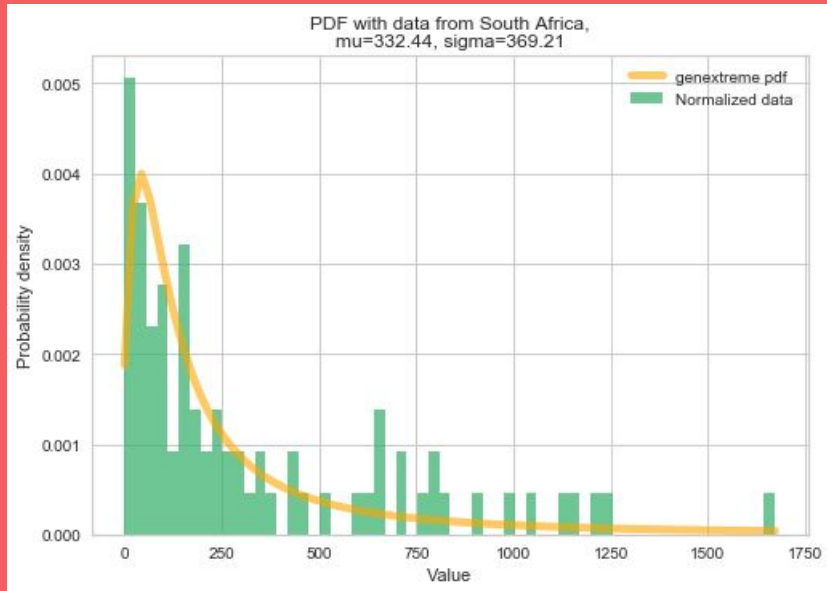
Visualização

- Regiões
- ◆ Mortes diárias



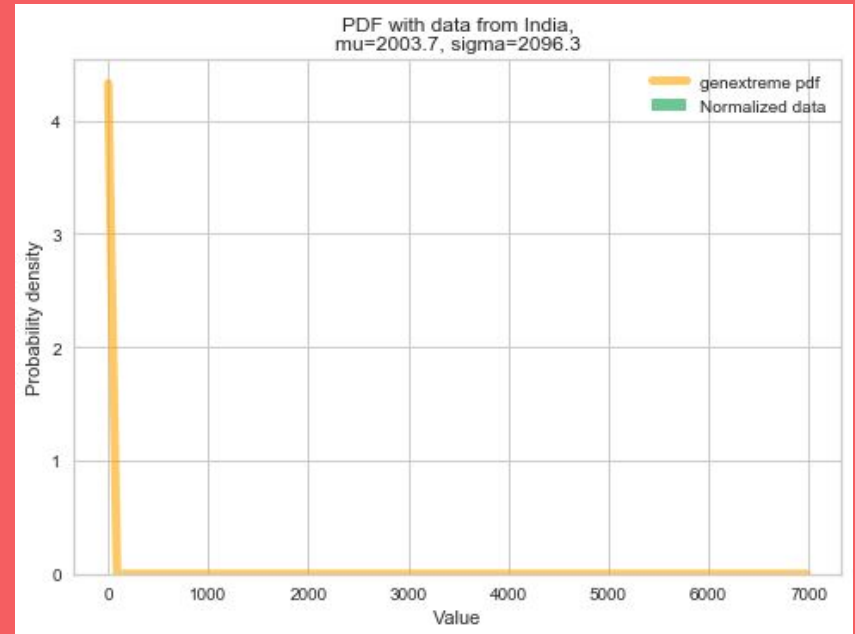
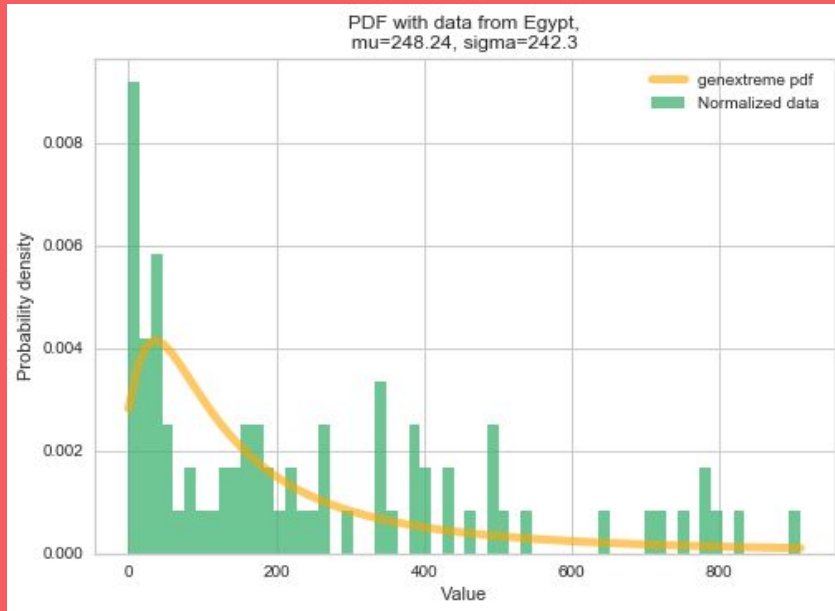
Histogramas

→ Países: África do Sul e Brasil



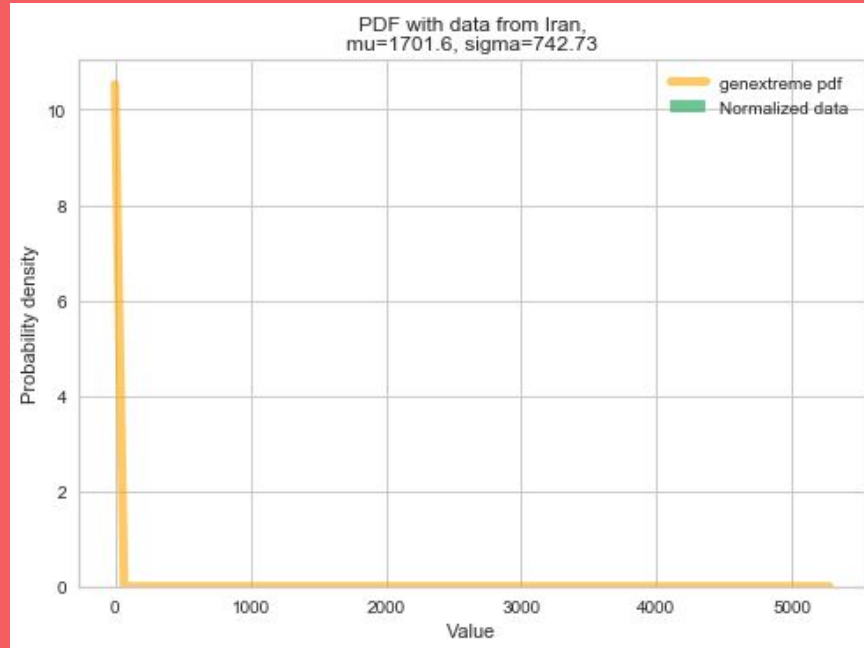
Histogramas

→ Países: Egito e Índia



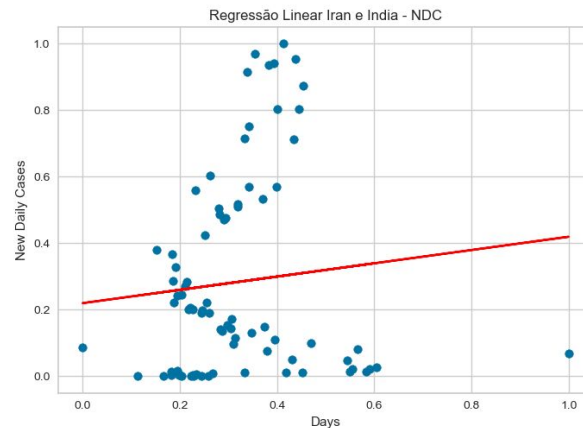
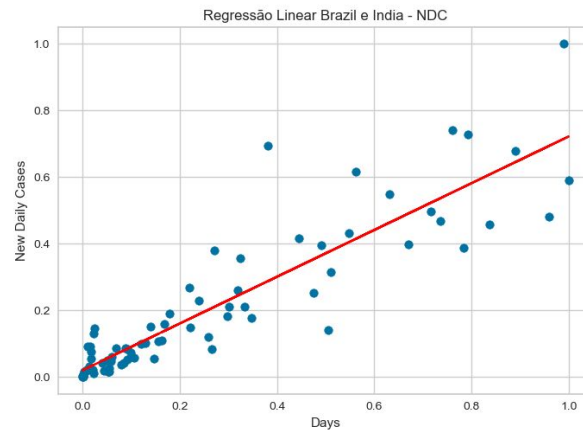
Histogramas

→ Países: Irã



Regressão linear

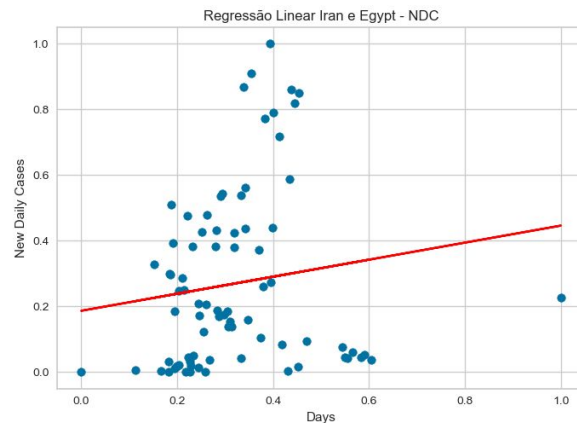
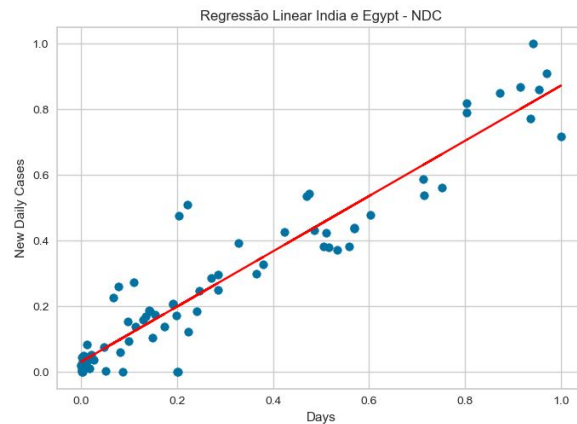
- Casos diários
 - ◆ Brasil e Índia;
 - ◆ Irã e Índia;



Regressão linear

→ Casos diários
◆ Índia e Egito;

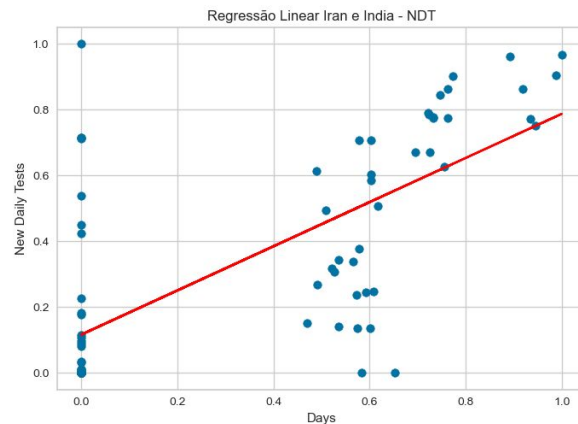
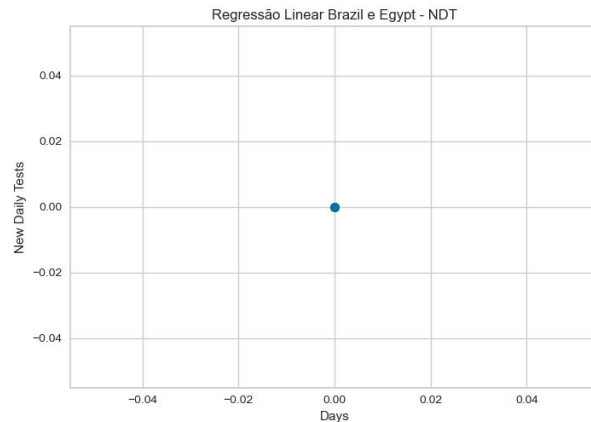
◆ Irã e Egito.



Regressão linear

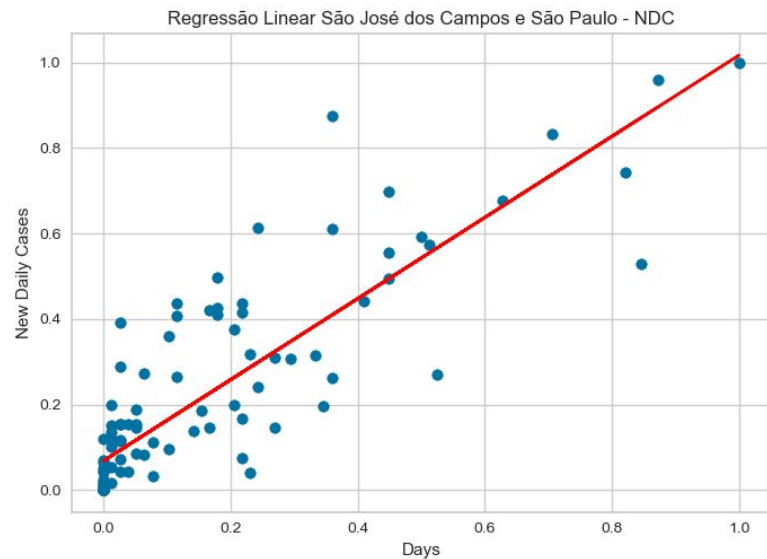
- Testes diários
 - ◆ Brasil e Egito
 - Não compartilham dados de testes.

- ◆ Irã e Índia.



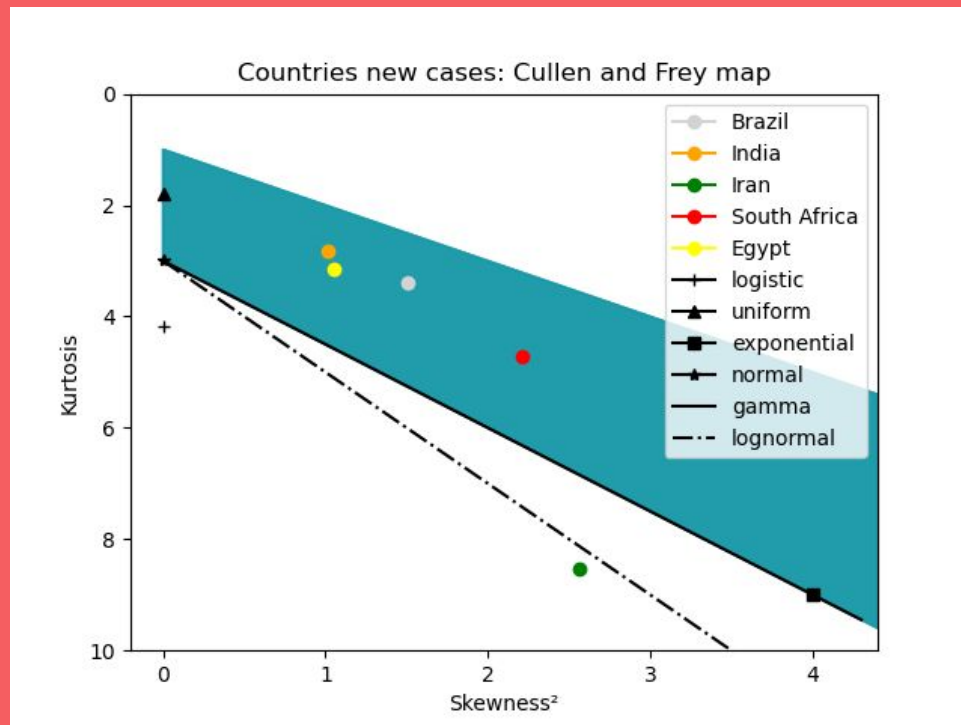
Regressão linear

- Casos diários
 - ◆ São José dos Campos e São Paulo.



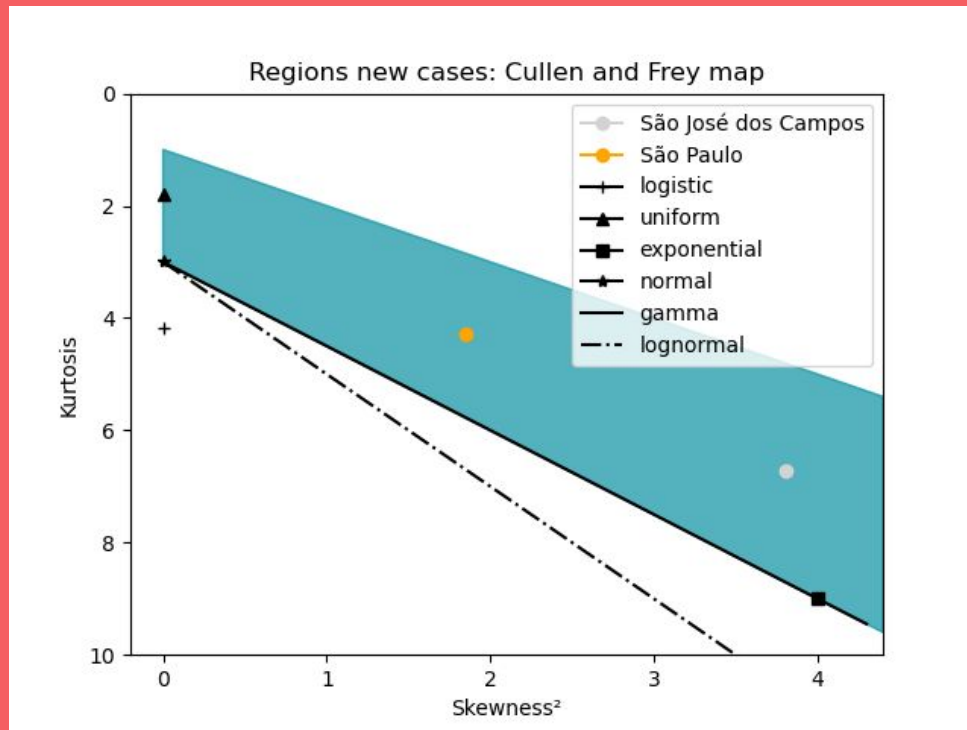
Classificação no espaço de Cullenfrey

→ Países



Classificação no espaço de Cullenfrey

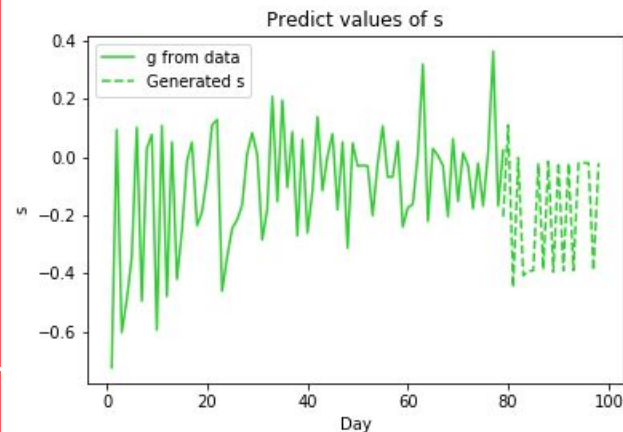
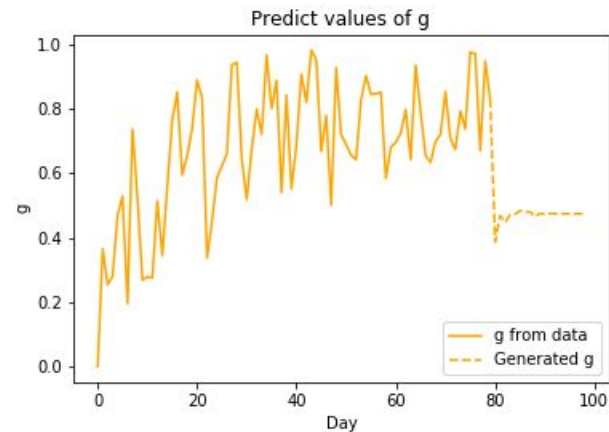
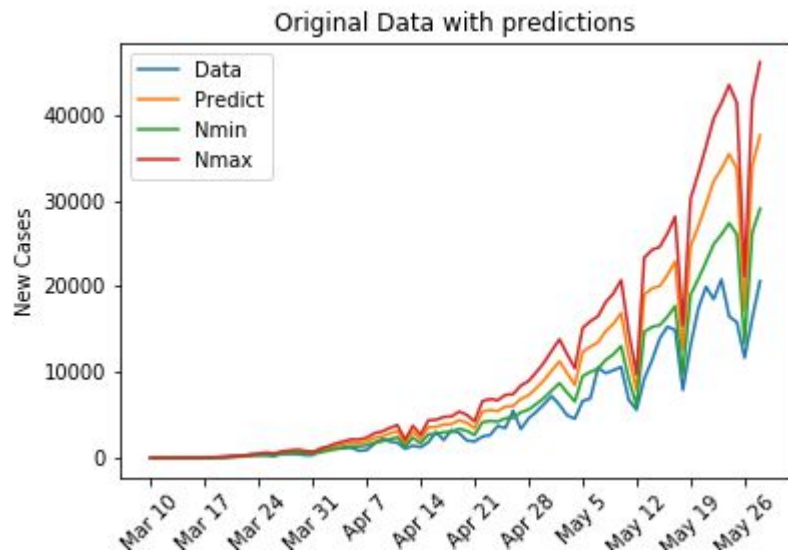
→ Regiões



Modelo IMCSF-COVID19

→ Países

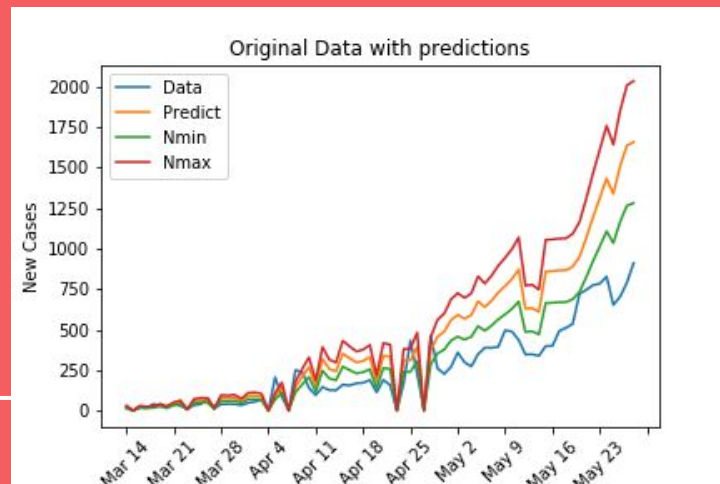
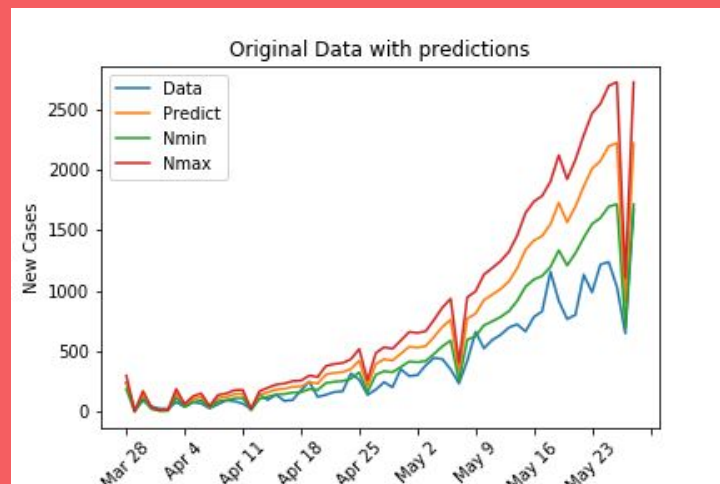
◆ Brasil;



Modelo IMCSF-COVID19

◆ África do Sul;

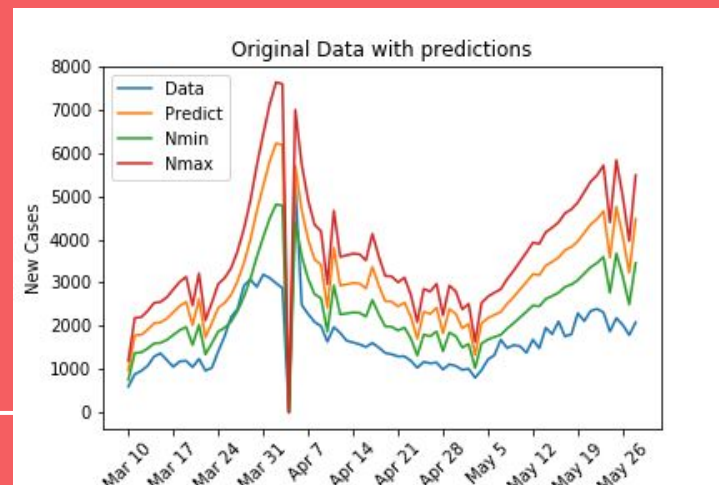
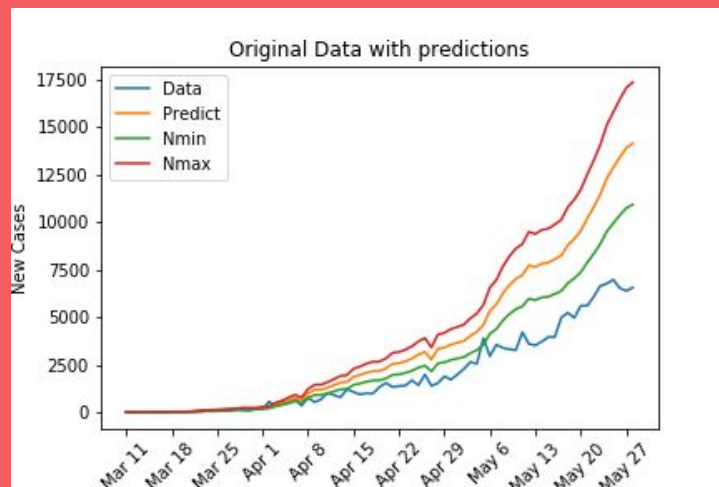
◆ Egito;



Modelo IMCSF-COVID19

◆ Índia;

◆ Irã;

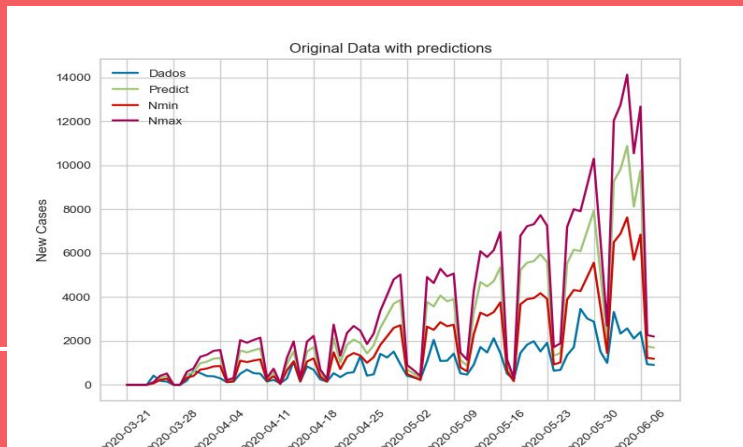
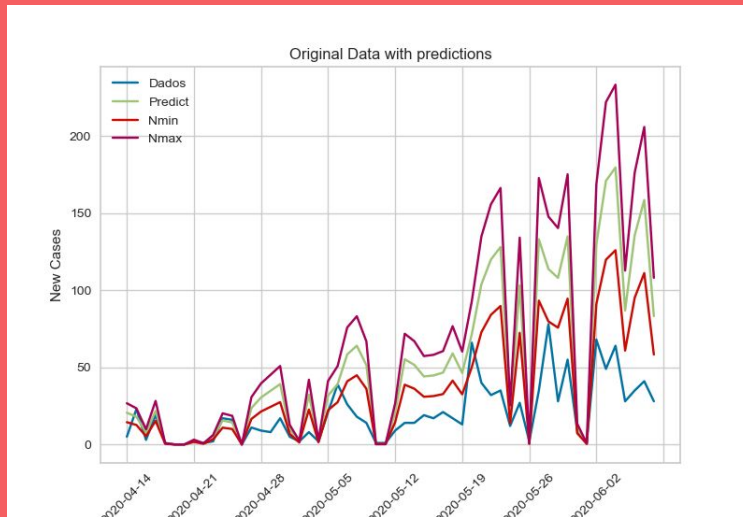


Modelo IMCSF-COVID19

→ Regiões

◆ São José dos Campos;

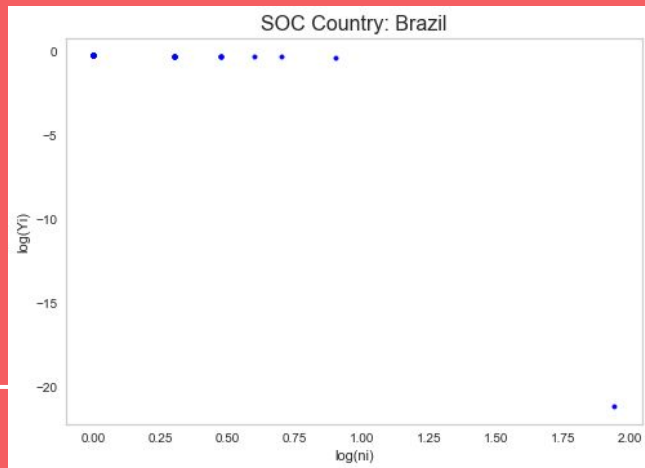
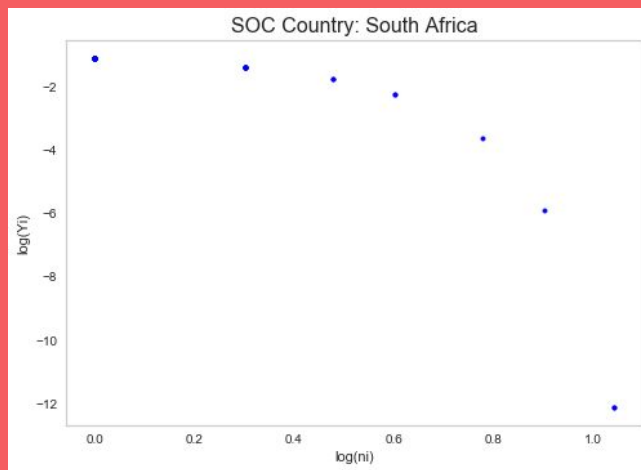
◆ São Paulo.



SOC

→ África do Sul;

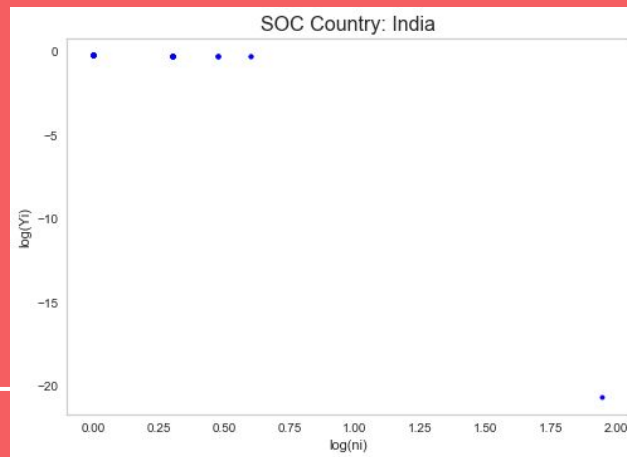
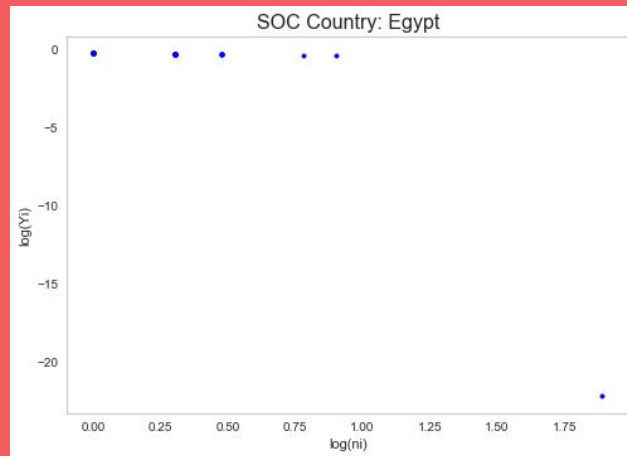
→ Brasil;



SOC

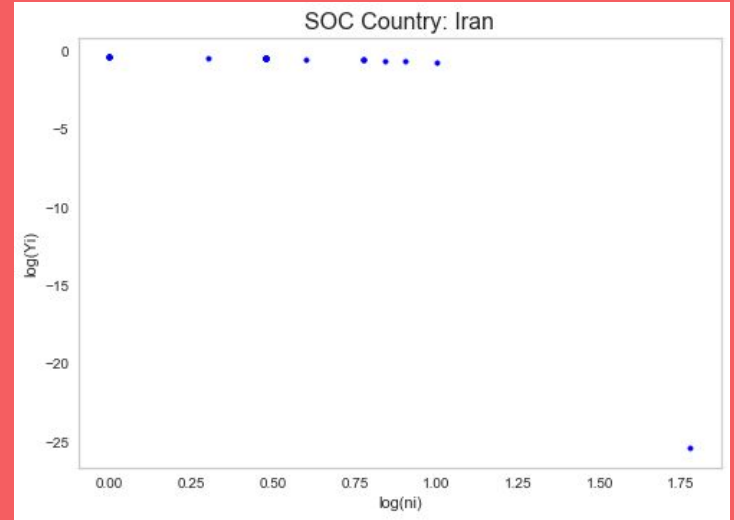
→ Egito;

→ Índia;



SOC

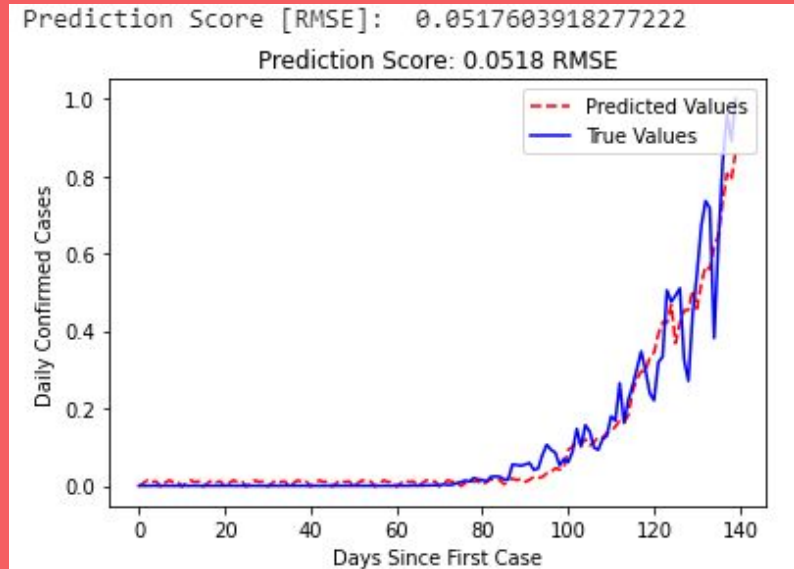
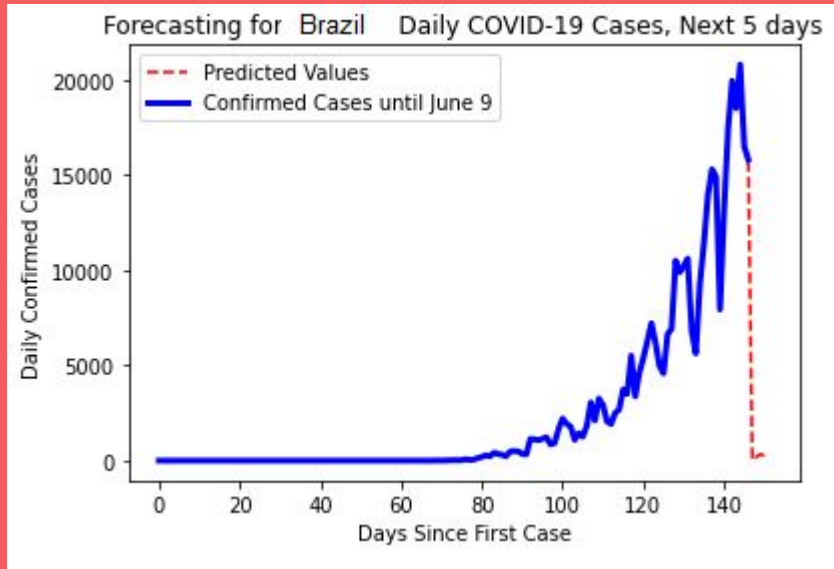
→ Irã;



LSTM

→ Brasil

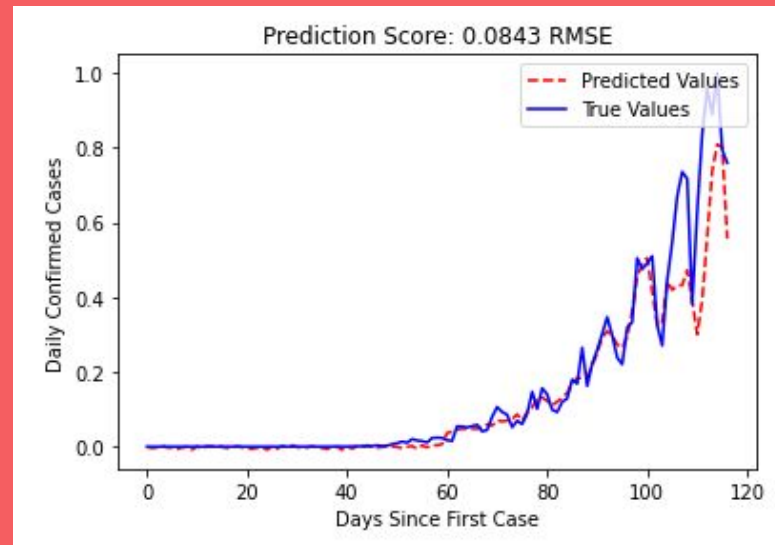
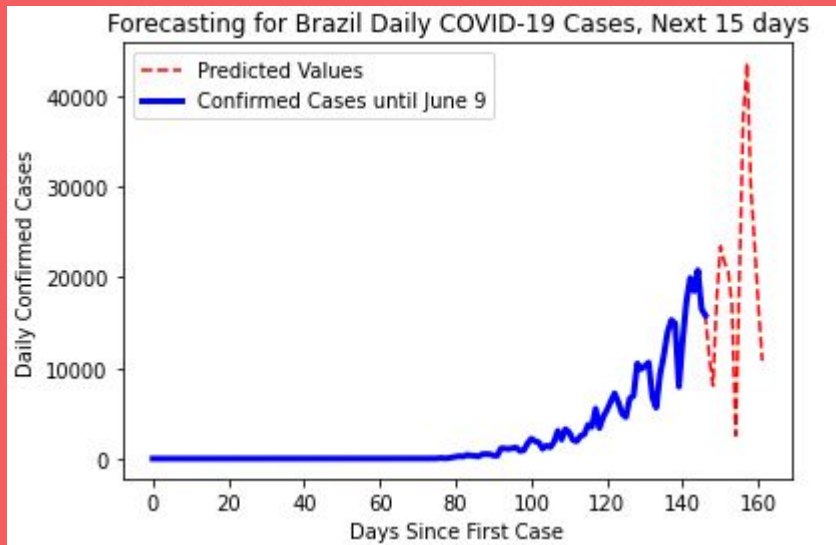
- ◆ Previsão com 50 épocas
- ◆ 5 dias de entrada e 5 gerados



LSTM

→ Brasil

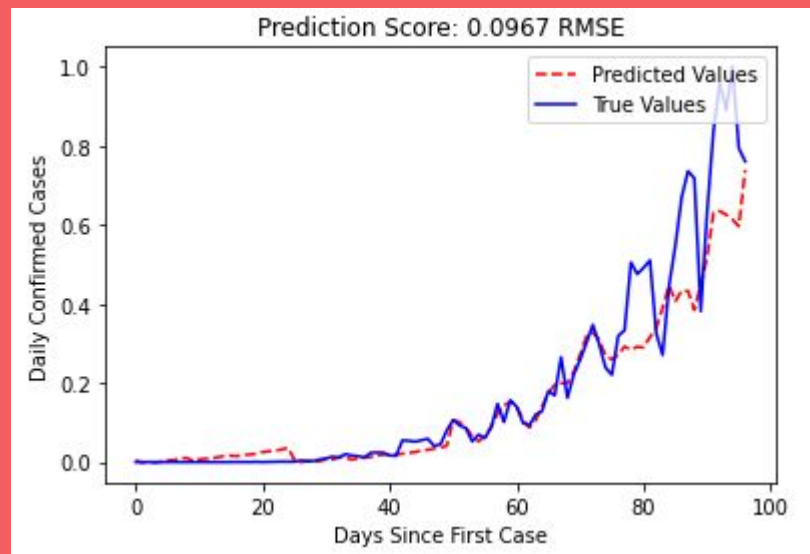
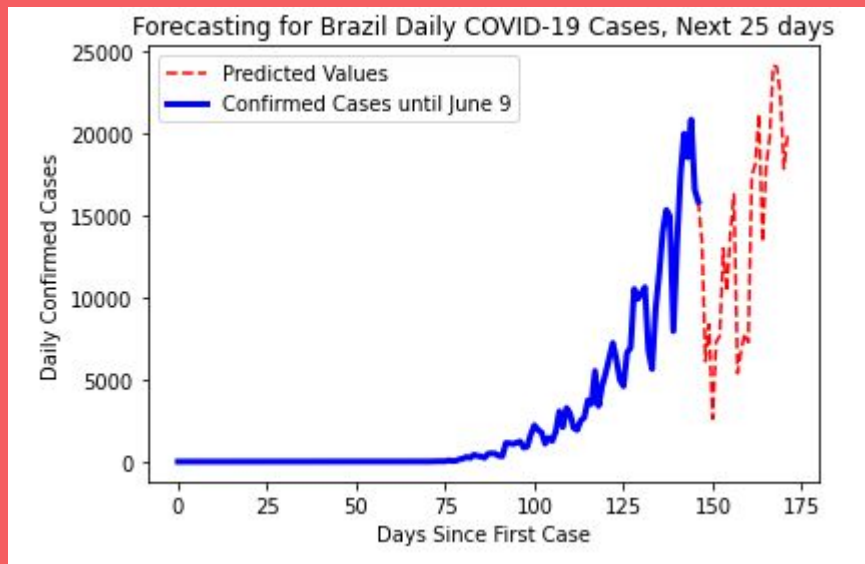
- ◆ Previsão com 200 épocas
- ◆ 30 dias de entrada e 15 gerados



LSTM

→ Brasil

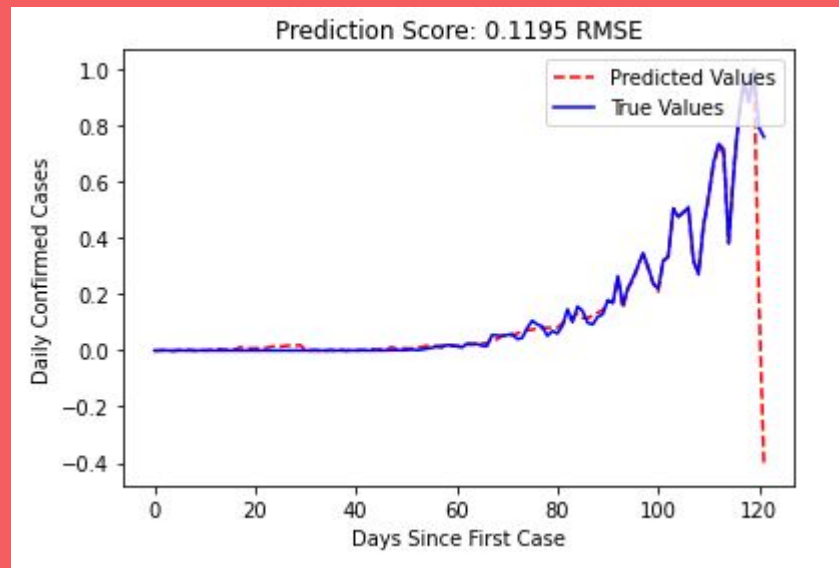
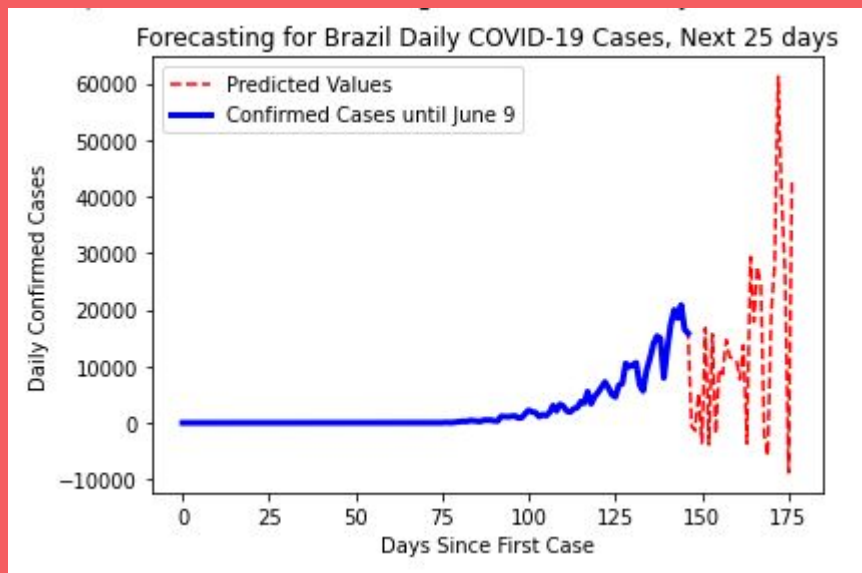
- ◆ Previsão com 400 épocas
- ◆ 50 dias de entrada e 25 gerados



LSTM

→ Brasil

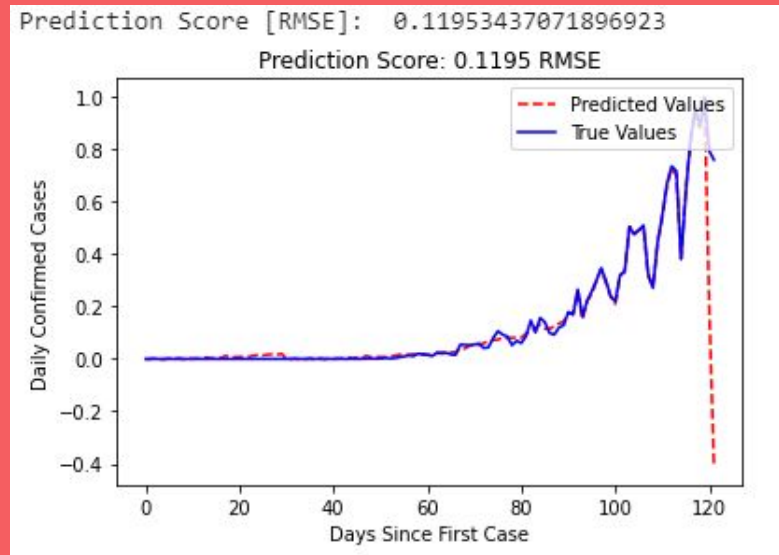
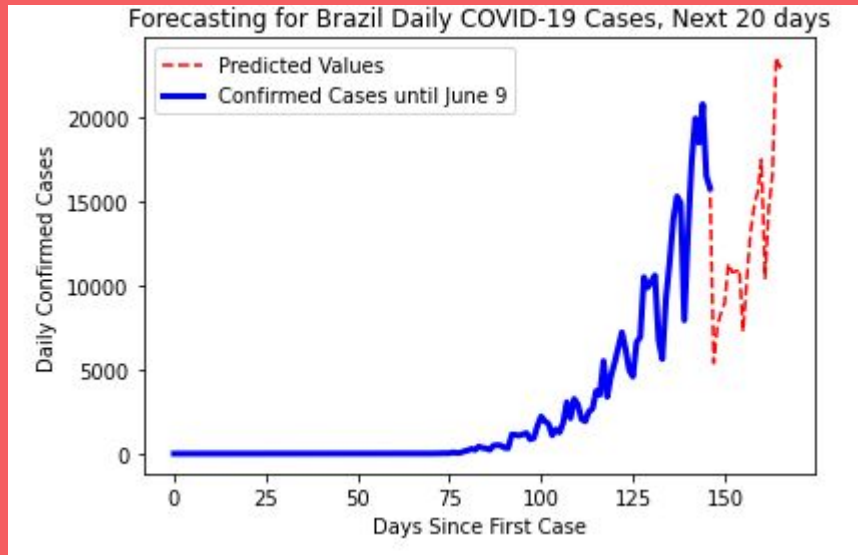
- ◆ Previsão com 500 épocas
- ◆ 30 dias de entrada e 25 gerados



LSTM

→ Brasil

- ◆ Previsão com 700 épocas
- ◆ 40 dias de entrada e 20 gerados



Obrigado!