

BYTE PANACHE COMPETITION

FOUNDATIONS OF MODERN MACHINE LEARNING



OBJECTIVES

we will use the concepts of regression and regularization we have learnt to predict early Covid-19 cases. We shall use linear regression, polynomial regression and ridge regression to obtain a reasonably good estimate of the future cases. Try experimenting with hyperparameters to obtain better results..

1. Feugiat vitae elit
2. bibendum ante sed lacinia eros in
3. Curabitur scelerisque arcu consequat varius
4. Dapibus nulla id purus consectetur
5. Fringilla integer

MATERIALS & METHODS

INTRODUCTION

COVID -19 was initially originated in bats and later transmitted to humans. Also it can transmit between people. Other pandemic similar to COVID was had emerged in Guangdong, China in 2002 and emerged in Middle East in 2012 like SARS and MARS.SARS-CoV-2 emerged in Wuhan in 2019.Since the day of its outbreak it has affected more than 200 countries. Since the day of outbreak, there have been 15,83,792 confirmed cases and 34,968 deaths in India as on 31st July 2020. Machine learning helps computers to learn, without being programmed. Machine learning is classified to two types, supervised learning and unsupervised learning. In supervised learning, new examples are mapped by

RESULTS 2

We shall use linear regression, polynomial regression and ridge regression to obtain a reasonably good estimate of the future cases. Try experimenting with hyperparameters to obtain better results.

State,Country
SNo ObservationDate
Last Update
Recovered

0 1 01/22/2020 Anhui Mainland China 1/22/2020 17:00 1.0 0.0 0.0
1 2 01/22/2020 Beijing Mainland China 1/22/2020 17:00 14.0 0.0 0.0
2 3 01/22/2020 Chongqing Mainland China 1/22/2020 17:00 6.0 0.0 0.0
4 01/22/2020 Fujian Mainland China 1/22/2020 17:00
5 01/22/2020 Gansu Mainland China 1/22/2020 17:00

RESULTS 1

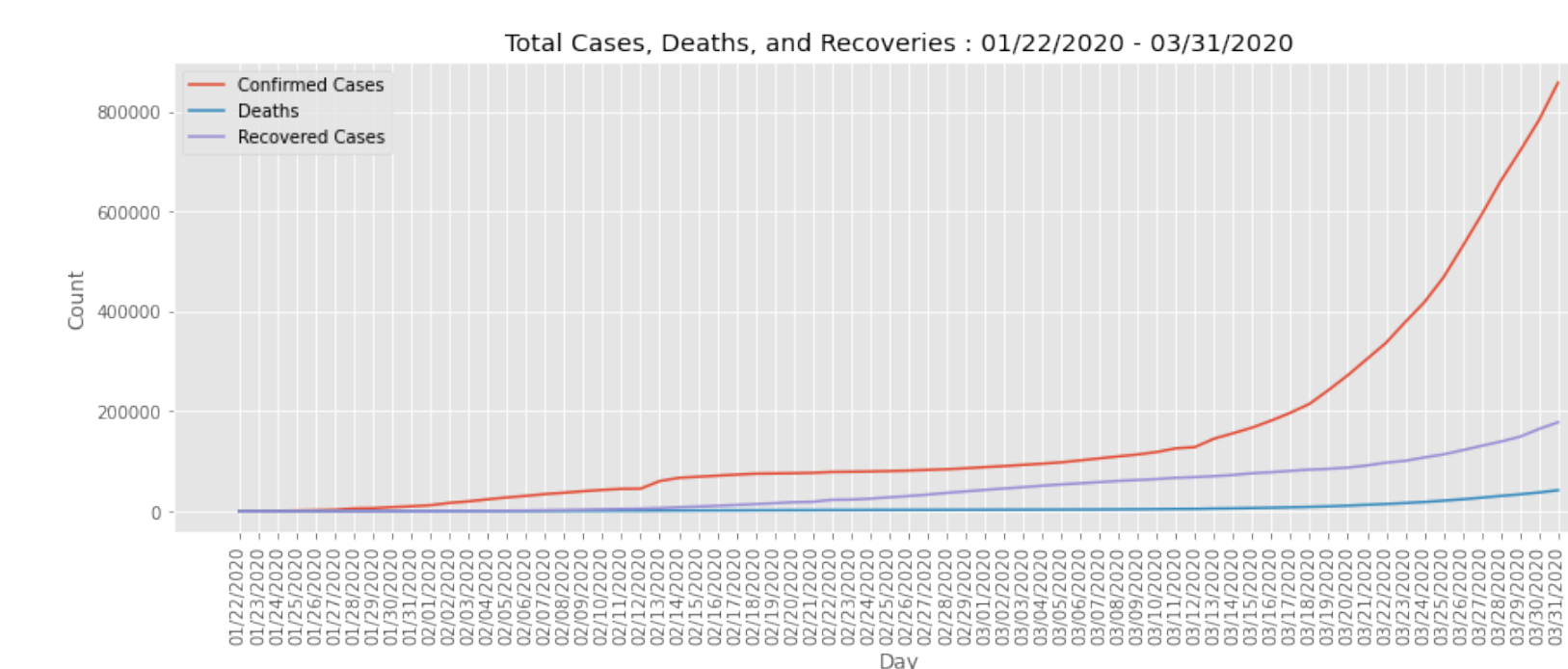
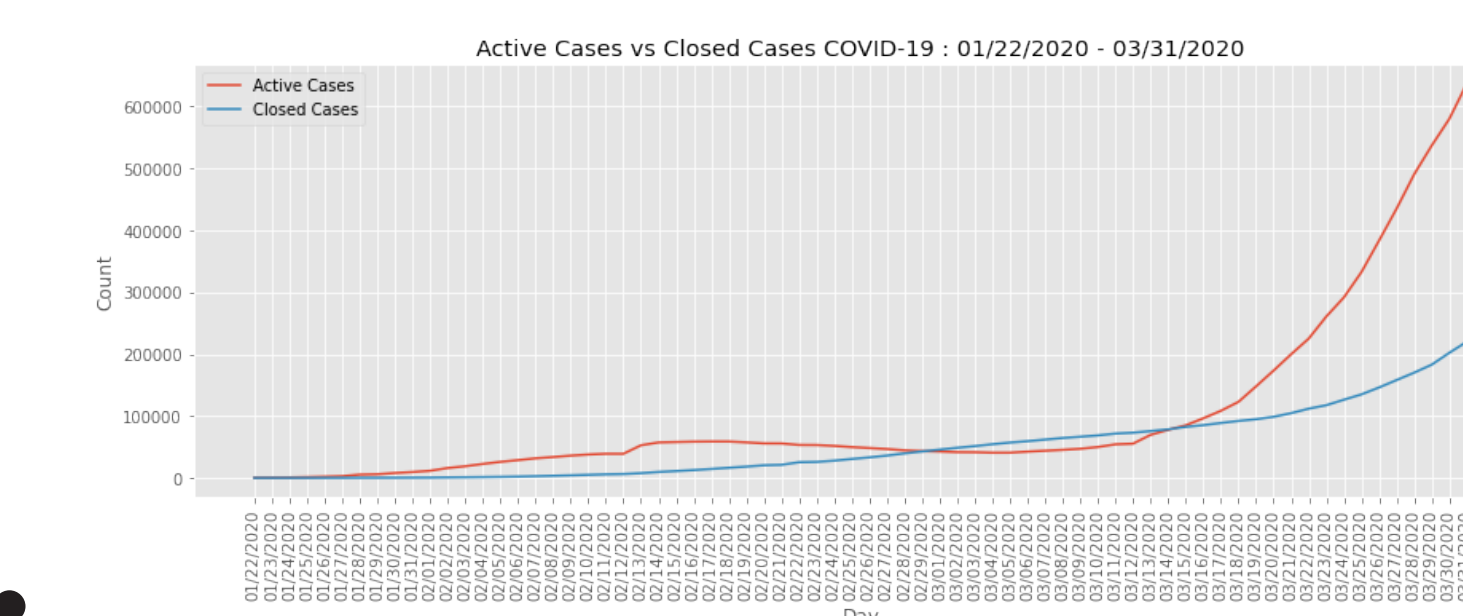


Figure 1: Figure caption

The results of linear regression are shown in below figures. The results for almost matched with training set, but in case of other states there is slight deviations. Initially all the states tried to control the disease by quarantining the people who got infected. But in case of all the states the number of cases are increasing. The mortality rate is much less compared to other states. had initially controlled by very efficiently tracing the contacts.

CONCLUSION



Covid 19 cases has been analysed using dataset. Linear regression and polynomial regression has been done using the available dataset. This analysis shows that the number of cases are going to increase in

the coming days. With respect to mortality rate, Maharashtra is the worst affected. Delhi and Tamil Nadu are also badly affected with respect to confirmed cases and mortality rate. Kerala has less mortality rate as compared to its confirmed cases. This study can be further extended by considering recovery rate and confirmed cases. Also other than regression, other models can also be used for analysis.

REFERENCES

- [1] Ghosal S, Sengupta S, Majumder M, Sinha B. Linear Regression Analysis to predict the number of deaths in India due to SARS-CoV-2 at 6 weeks from day 0 (100 cases - March 14th 2020). Diabetes Metab Syndr. 2020;14(4):311-315. doi:10.1016/j.dsx.2020.03.017
- [2] New York City Department of Health and Mental Hygiene (DOHMH) COVID-19 Response Team. Preliminary Estimate of Excess Mortality During the COVID-19 Outbreak - New York City, March 11-May 2, 2020. MMWR Morb Mortal Wkly Rep. 2020;69(19):603605. Published 2020 May 15. doi:10.15585/mmwr.mm6919e5

FUTURE RESEARCH

Analysis shows that the number of confirmed cases and mortality rate is going to increase in the coming months as community spread has started.

Maharashtra has the highest with 441228 confirmed cases and 15576 deaths.

CONTACT INFORMATION

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