## Assignment for Machine Learning

Friends, we are stuck at our homes due to the Covid pandemic. I hope you are tracking what is happening across the world.

With everyone connected to everyone else, we can access the data available from across the world and track different trends. The site https://www.worldometers.info/coronavirus/ is a very good resource to track basic trends/parameters like latest cases/death/recovery figures, country and age-wise. From the figures/graphs available for different countries, some other dependencies can also be gauged. For example, there are articles/hypotheses that many other parameters like temperature/humidity/racial-immunity plays a role as well. It has been observed that maximum cases are on the North of tropic of cancer and as we go close to equator there is less outage (maybe for different reasons mentioned above + less testing, lower exposure to other affected countries etc). Secondly, there has been some models which predict the numbers in different countries say 2 months down the line going by current trend. But some others argue that these trends need to take disruptions like "lockdown" into consideration. For example, it has been observed that the pandemic curve is flattened after typically 14 days of strict lockdown, otherwise it grows exponentially. Countries like China (and now Italy) are proved that, whereas US and Spain are not having flattening of curve so much due to mild/partial lockdown. Similarly trends can be figured out for different states in India also, based on traveller population (Maharashtra/Kerala), initial number of cases before lockdown and maybe on some other parameters.

Friends, consider above discussion as hints given about probable dependencies of the predictive trend. As part of assignment, you are free to choose/define the problem statement as you like (based on above discussion or any other hypothesis/technique) for any trend prediction. You are also free to choose any ML algorithm we have studied in class (Decision tree, Neural Networks, Deep Learning,Baysian learning etc) or any other of your choice. Come up with a problem statement, design of the model/solution and create a Word/PPT documentation for the same. Similarly implement the solution proposed using libraries available for different ML algorithms or develop your own.

**Deliverables**

1. Assignment to be done either alone or in a group of 2 at-max (assuming you can collaborate on email/phone/shared-platform).
2. PPT/Word-doc describing the problem, choice of your ML algo and why (remember inductive bias), and design of your model (input-output, choice of ML algo and library)

**End-date**

1. PPT/Word should be delivered/submitted definitely by 7th April, 2020
2. Implementation should be ready to be submitted on 15th April, 2020
3. The submission should be sent to machine.learning.vnit@gmail.com on or before the last date.

*PTO. References on the next page.*

References –


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5. https://www.hindustantimes.com/analysis/can-india-be-an-outlier-in-the-spread-of-covid-19/story-OS2c161BQhD7Ne33x26h0L.html
6. https://www.bbc.com/future/article/20200323-coronavirus-will-hot-weather-kill-covid-19
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