The on-going Covid19 Pandemic has caused great disruption in all aspects of human life. While protecting lives must remain our priority, lockdown measures have a significant impact in the economy and thus jeopardize prosperity and development all over the world. Leaders are faced with the need to make decisions that both minimize the risk of losing lives and protect the economy. Decisions regarding the loosening or tightening of lockdown restrictions are critical and need to be based on reliable information.

Kevin Systrom (2020a) proposed the use of the *effective reproduction number (Rt)* as a metric we can use to make such decisions, in his work he calculates Rt for every state in the US and indicates in which ones the presence of the virus is likely to be at a manageable level. If Rt is above 1, restrictions should not be lifted, if Rt is considerably below 1, there will be a lesser risk associated to lifting lockdown measures. Systrom also suggests that local calculations of Rt could help a more effective management of the pandemic.

Systrom’s model for Rt calculation is based on the work of Bettencourt and Ribeiro (2008) who use Bayesian modelling to find Rt using the number of new daily cases as input. Systrom proposed the addition of gaussian noise to account for changes in time (Systrom, 2020b).

We present a solution based on Systrom’s work. Using the available datasets from John Hopkin’s University (QUOTE) we use Systrom’s model to calculate Rt at the county level, for all counties in the US with at least XXX cases. We then proceed to use time-series analysis to create a prediction for the number of new cases during the upcoming week, and compute Rt predictions based on those estimated values.

Information is presented through a webapp that will allow for county selection, and display Rt values. All Rt calculations and predictions will be automatically updated once everyday after they become available from JHU’s repository.

We hope our work tackles the following critical issues in the handling of the pandemic:

* Access to a unified and standardized metric that provides feedback on the effectivity of lockdown measures
* Information about the Pandemic’s evolution at a local level
* The possibility of doing short-term planning based on predictions of new cases