Problem Description and Background Discussion

On March 21, 2020, the City of Chicago came under the stay-at-home gubernatorial order in the aftermath of the outbreak of Coronavirus Disease in the last quarter of 2019 (COVID-19). In the fight against COVID-19, the administration of the City of Chicago is on the lookout for data analysis and insight that would provide the foundation to contain the spread of the virus.

Effective data analysis and insight is the tool that would enable the mayoral administration of the City of Chicago to enact orders, rules, regulations, guidelines, measures, activities and operations aiming at enabling the city-wide response that is specific and appropriate to each zip code area.

On what has to be designed as the target variable, the first criterion upon which the response would be determined is the overall contagion intensity of COVID-19 per Chicago's zip code area.

The actual contagion intensity of COVID-19 per Chicago's zip code area feeds into the two-part deep neural network whose nodes in the layers are activated by a hybrid of swish, softplus, ReLU and leaky ReLU activation function.