Prediction of signal drop due to rain at user cellular signal reception

Abstract

This paper is about prediction of cellular signal loss or drop due to rain at user cellular signal reception. The Cellular Signals are affected by so many factors like temperature, rain, fog, wind, etc. As water is a good conductor of heat and electricity, when a rainfall starts the water droplets absorb the energy of radio signals and turn them into heat which leads to degradation of strength of radio signal. The radio signal which travels during rainfall may get reflected, refracted and scattered which can cause signal to get lost, deviate and drop the call. As this is the main scenario at cellular signals, how about prediction of signal loss/ drop due to rain. To predict the signal loss we need a dataset of rainfall reading and signal loss/drop reading for certain periods of time at all rain conditions and ideal condition of no rainfall. By this, we can visualize the loss/drop of signal at various conditions. To predict the future signal loss we need to build an algorithm by using ML algorithm techniques, which predict the signal loss in all and no rainfall conditions like light/medium/heavy/no rainfall. By using the no rainfall condition as ideal condition we can estimate how much signal got lost/dropped.