Hong paper:

* Land use regression are used to estimate special variations in outdoor air pollutions
* The special coverage is limited by the GIS data so people living outside are usually excluded from it
* Developed LUR models for ultrafine particle concentrations in Montreal and Toronto.
* Database was used to generate points across Canada
* The information was gathered during summer and winter months
* The Lat and Lon coords were randomly generated and could cause inflation of model performance
* To overcome these issues, all latitude-longitude points were assigned a six-digit geohash code corresponding to their location on a rectangular grid of geohash cells covering approximately 600 x 600-m each
* The information was expanded to regions with land and traffic use similar to the original model areas
* CNN based models were used and were given 2 input images to predict special variations
* Final CNN-based models used the Xception base and the Nadam optimizer with a learning rate of 0.002. CNN-based models provided reliable estimates of LUR model predictions in both cities
* Satellite images and deep convolutional neural networks can be used to extend the spatial scale of LUR models to regions with missing GIS data.