

Mission statement

Welcome to Anti-allergies, this is a user-interactive web app developed for the Canadian population that is sensitive to seasonal allergy. According to the research, approximately 20% to 25% percent of Canadians suffer from this seasonal allergy, which comes from certain species of trees that release pollen during springtime. Under this circumstance, the patients are unable to do outdoor activities such as hiking and short distance city trips, due to severe symptoms of sneezing, itchy eyes, hives and coughing. Thus, the purpose of this web app is to assist the allergy-sensitive population to locate the areas in the city where there are various trees that release allergens, in order to avoid the illness and make well-prepared city trips.

User's benefit

Wind can carry the tree pollen to people who are sensitive to the seasonal allergy. This would cause severe coughing, sneezing, itchy eyes and hives. With this app, users can create their own reports of the allergy symptoms that they have and upload them to the app. After uploading the reports, the app would show red marks on the street map so that other users who are preparing a 'hangout' could know in which areas the risk of illness is high in advance. Meanwhile, users are able to avoid allergies (by not going to certain areas) by checking the pollen concentration zone, which shows scales of concentration level of the pollen-releasing trees. In future, we will implement methods that can predict the chance of a user that is highly allergic to a certain type of tree, which will further help them to avoid reaching areas with such types of trees.

Layer Description

In the web app, there are five layers included, which are Tree, High concentrated pollen zone, User report, Current wind and temperature and Current Weather and Wind Station Data - Buoys.

- **Tree:** It contains 15 species of trees in Toronto Zoning that release allergens during springtime.
- **High concentrated pollen spread layer:** It is the scale number that evaluates the concentration of the tree species that release pollen in certain areas
- **User report:** In this layer, the web app users can open a window to report their allergy symptoms with specific date and time. Once it is reported, the map would show red spots that indicate known allergy cases in certain areas in the city.
- **Current wind and temperature:** Powered by Living Atlas in ArcGIS, shows real-time change of weather report, including wind speed, direction, and temperature, etc.

Data sources

Tree data is found on ArcGIS Hub open data

Allergy related articles found on:

- <https://www.sciencedirect.com/science/article/abs/pii/S0378112709003570>

- <https://www.sciencedirect.com/topics/medicine-and-dentistry/pollen>
- <https://www.sciencedirect.com/science/article/pii/S0048969717309749#bbb0225>
- <https://www.sciencedirect.com/science/article/pii/S0168192313002104>

Video link

<https://www.youtube.com/watch?v=vANnTo4F66M&feature=youtu.be&fbclid=IwAR1oXMU8U5YFkdeTxZNiwgU9PUm4-dN2beM9sE7faziFLPQQedV13pp8FGQ>