

CSCI 4210U - Information Visualization  
Topic Proposal and Justification

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We, Adwan Salahuddin Syed, Agilan Ampigaipathar and Jude Antony certify that this work is our own, submitted for CSCI 4210U in compliance with the Academic Integrity Policy.

## ***Introduction***

We have chosen to do a problem-driven design study, for which we wish to investigate an ongoing problem which hasn't been solved in Toronto. The problem we have decided to study is that certain wards in Toronto do not have access to bicycle parking in comparison to others so we would like to do a visualization which can be presented to the City of Toronto highlighting the many wards in Toronto which lack cycling access.

## ***Dataset and Plan***

In order to conduct this study we have found a dataset which is updated regularly in Toronto's Open Data repository. The dataset we chose to start our study is [Bicycle Parking - High Capacity \(Outdoor\)](#). In correspondence with that dataset, we will additionally use [Bicycle Parking Racks](#) to map out the permanent and seasonal multiple-capacity bicycle parking racks installed and managed by the Cycling Infrastructure and Programs Unit. Additionally, we aim to investigate potential solutions from existing infrastructure such as [Bike Share Toronto](#).

## ***Significance of the Study (Statement of the Problem)***

There are also a number of parks with an increasing need for bicycle parking within many of the problematic wards as well as some outside of them, and so we need to better understand the current map of the bicycle parking in relation to the [parks of Toronto](#). Ideally, all the Parks and Recreation facilities should have enough bicycle parking nearby as these are areas we suspect has a high bicycle usage population especially among the recreation community and families biking around parks.

## ***Purpose of the Study***

We chose the primary dataset because it contains the geospatial data we need within Toronto including all the different wards there is bicycle parking available outdoors. By visualizing this dataset in relation to other datasets, we hope to be able to understand and identify wards with a need for increased bicycle parking to ultimately pinpoint and present to City of Toronto policymakers the current situation, and our proposed solution(s) we derive from our visualization work.

## Article Findings

Bike parking shortage:

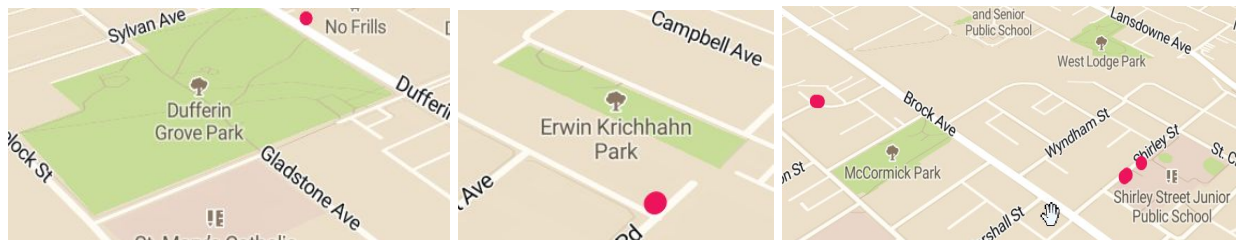
- <http://dandyhorsemagazine.com/blog/2014/09/10/racknroll-bike-parking-in-toronto-not-keeping-pace/>
- <https://www.thestar.com/opinion/commentary/2016/09/13/bike-parking-falling-far-short-of-demand.html>

Room to investigate other issues paired with other datasets:

- High-problem areas (“red-zones”) places you might not want to park:
  - <https://dailyhive.com/toronto/toronto-launches-bikespace-app-2018>

## Initial Findings

As emphasized through the articles, this is a significant social problem. Some of our initial findings indicate that popular areas of the city that would generally have the largest population of people also consist of the largest number of bicycle parking spots. With further [examination](#), it becomes apparent that some of these are seasonal multiple-capacity bicycle parking racks installed and managed by the Cycling Infrastructure and Programs Unit. [Bike Share Toronto](#) has 5000 bicycles, 465 stations and 8550 docking points, which should not be mistaken as regular free bicycle parking a normal cyclist would use, so distinguishing between these is another task that is worth exploring.



As seen from this [map](#), there are many parks where there is no nearby bicycle parking, and so mapping with [Parks and Recreation Facilities dataset](#) will help visualize the correlation and propose solutions. A holistic view of the independent datasets will shed light on the aforementioned issues to better understand the bicycle parking situation in Toronto and to propose new solutions using existing infrastructure.