Photo Walk Project Report

DGM 6108 - Fall 2025

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1. Project Ideation

1.1 Background

Around 2015, I just began taking photos while out and about—on vacation, during my daily commutes on Caltrain, while hiking. I started experimenting with using Adobe Suite to edit and collage the photos into abstract compositions, and that whole project took on a life on its own. Eventually photography (and the resulting art) got incorporated into my daily travel activities with everything else. Despite how gratifying it is to generate creative work though, I tend to get stuck in a routine or being a homebody. I hope that getting myself to explore and leave my apartment more often will facilitate my engagement with photography on a less intermittent basis.

In the process of moving to Vancouver for this program, I spent more time out and about running errands and visiting places I wouldn't see again for a while. I noticed that the number of steps and photos I was taking both increased drastically. Walking more improved my energy levels, which got me out and walking more. Seeing the photos I had taken got me excited to take more photos, especially while walking towards my goal to visit every park in Vancouver.

1.2 Hypothesis

Primary Hypothesis: Steps
The more (steps) I walk, the more photos I take.

Additional Factor: Location Familiarity
I hypothesized that I take more photos while visiting new destinations than when walking around familiar locations like my own neighbourhood.

Additional Factor: Weather
Colder, rainy seasons likely impact my desire to go outside. I probably either go out less, or walk less when I do, instead favouring indoor transportation like bus and Skytrain.

Additional Factor: Transit Usage
I hypothesized that I take fewer photos while on public transit because there is less time and opportunity to look for photo subjects in the environment than when traveling on foot.

However, I considered that taking public transit could enable me to reach further and more unfamiliar destinations, thus having an overall positive effect on my number of photos taken.

Additional Factor: Max Distance

I included the max distance variable to encourage myself to explore further outside my comfort zone. I was also curious whether it would be more fruitful to walk more in my own neighbourhood, or to travel further to walk in a new location.

2. Data Collection

To explore these factors, I wore my Apple Watch while going about my daily activities. While using the Maps app to navigate around town, I took screen captures of my directions (which show origin, destination(s), route, and travel methods) each time I embarked on a journey, or make changes to a journey in progress.

To reduce any impact on my daily routine and increase ease of data collection, I collected real-time data (e.g. location, weather) via screen captures, and then entered them into a spreadsheet weekly.

2.1 Data Collection Proposal

Data Collected	Unit/Scale	Expected Range	Collection Frequency	Collection Method
Date	Month/Day	Sept 25 - Dec 10	Daily	Calendar
Number of steps walked	Steps	0 - 20000	Daily	Apple Watch
Number of photos taken	Photos	0 - 300	Daily	Photos app
Precipitation	Millimeters	0 - 200	Daily	Weather app
Temperature	Degrees C	0 - 25	Daily, high and low	Weather app
Locations visited	Location name	Infinite	Daily	Maps app
Familiarity with location visited	Not at all familiar - Very familiar	1 - 4	Per location	Manually recorded in spreadsheet
Maximum distance traveled from home	Kilometers	0 - 5000	Weekly	Measured as the crow flies from home to furthest location via: freemaptools.com/measure-distance.htm
Transportation methods used	Transit type	Walk, Skytrain, Bus, Ferry, Car, Plane, Train	Daily	Maps app
Energy level	Exhausted to highly energized	0 - 10	Morning and evening	Manually recorded in spreadsheet

2.2 Data Collection Process

2.2.1 Actual Data Collected

Data Collected	Unit/Scale	Actual Range	Collection Frequency	Collection Method
Date	Month/Day	Sept 25 - Dec 10	Daily	Calendar
Number of steps walked	Steps	0 - 17758	Daily	Apple Watch
Number of photos taken	Photos	0 - 96	Daily	Photos app
Precipitation	Millimeters	0 - 90.6	Daily	Weather app
*Temperature**	Degrees Celsius	2 - 20	Daily - high and low	Weather app
Locations visited	Location name	Infinite	Daily	Maps app
Familiarity with location visited	Not at all familiar to Very familiar	1 - 4	Per location	Manually recorded in spreadsheet
Transportation methods used	Transit type	Walk, Skytrain, Bus	Daily	Maps app
*Energy level**	Exhausted to highly energized	0 - 10	Morning and evening	Manually recorded in spreadsheet
Maximum distance traveled from home	Kilometers	0 - 5000	Weekly	Measured as the crow flies from home to furthest location via: freemaptools.com/measure-distance.htm

2.2.2 Variables Calculated

Data Calculated	Description	Unit/Scale	Range	Calculated from
Location Count	Total number of locations visited	Locations	0 - 4	*Locations visited*
Average daily familiarity	Mean familiarity with locations visited	N/A	1 - 4	*Familiarity with location visited*
Bus travel?	Boolean value indicating whether I rode a bus that day	N/A	True, False	*Transportation methods used*
Skytrain travel?	Boolean value indicating whether I rode Skytrain that day	N/A	True, False	*Transportation methods used*
School day?	Boolean value indicating whether I attended class on campus that day	N/A	True, False	*Locations visited*
Park?	Boolean value indicating whether I visited a city park that day	N/A	True, False	*Locations visited*
Shopping corridor?	Boolean value indicating whether I visited a “Main Street” type shopping district that day	N/A	True, False	*Locations visited*

*I stopped tracking *energy level* data on Oct 24th, when I noticed that my energy levels were primarily related to variables I’m not studying in this project. I stopped tracking temperature data on November 7th, after identifying the most important variables I wanted to work with in my final visualization.

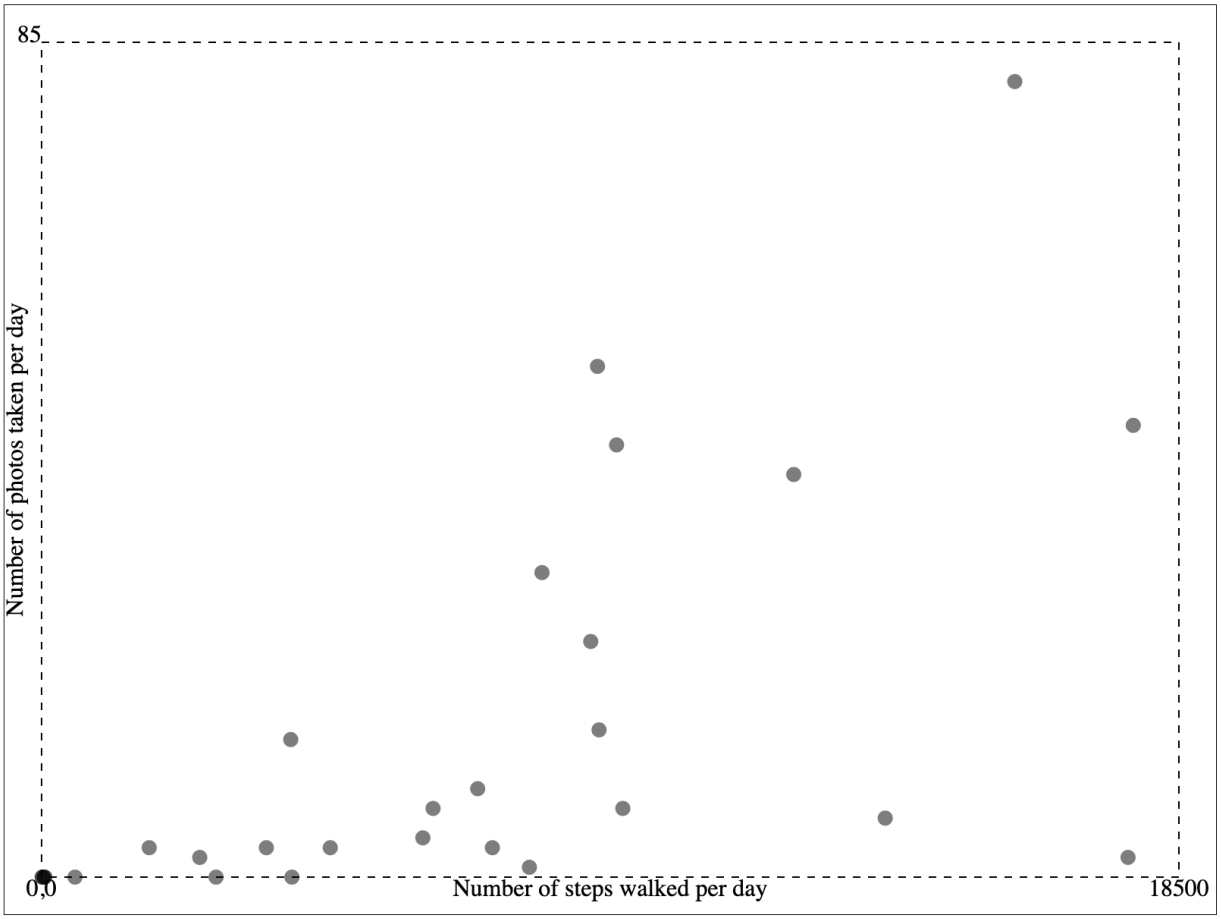
2.3 JSON Representation

DATA	JSON KEY
Date	date
Number of steps walked	steps
Number of photos taken	photos
Precipitation	precipMM
Temperature	tempC, hiTemp, loTemp
Energy level	energy, energyAM, energyPM
Location Count	locCount
Locations visited	locName
Familiarity with location visited	locFamiliar
Average daily familiarity	avgFam
Maximum distance traveled from home	maxDistKM
Bus travel?	busBool
Skytrain travel?	skytrainBool
School day?	schoolday
Park?	park
Shopping Corridor?	shoppingCorr

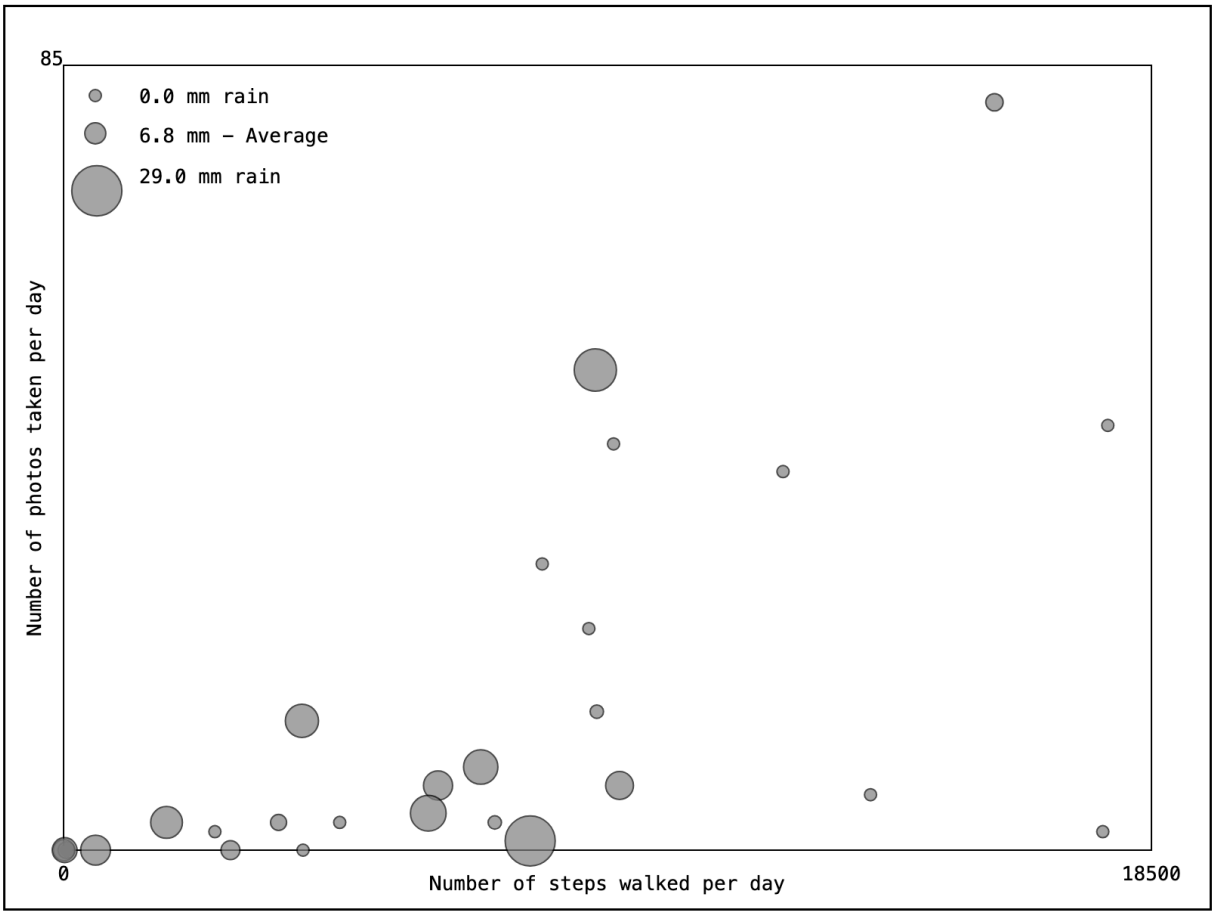
View all JSON data here: https://rileyly.github.io/DGM-6109/term/final/data.json

3. Visualizations

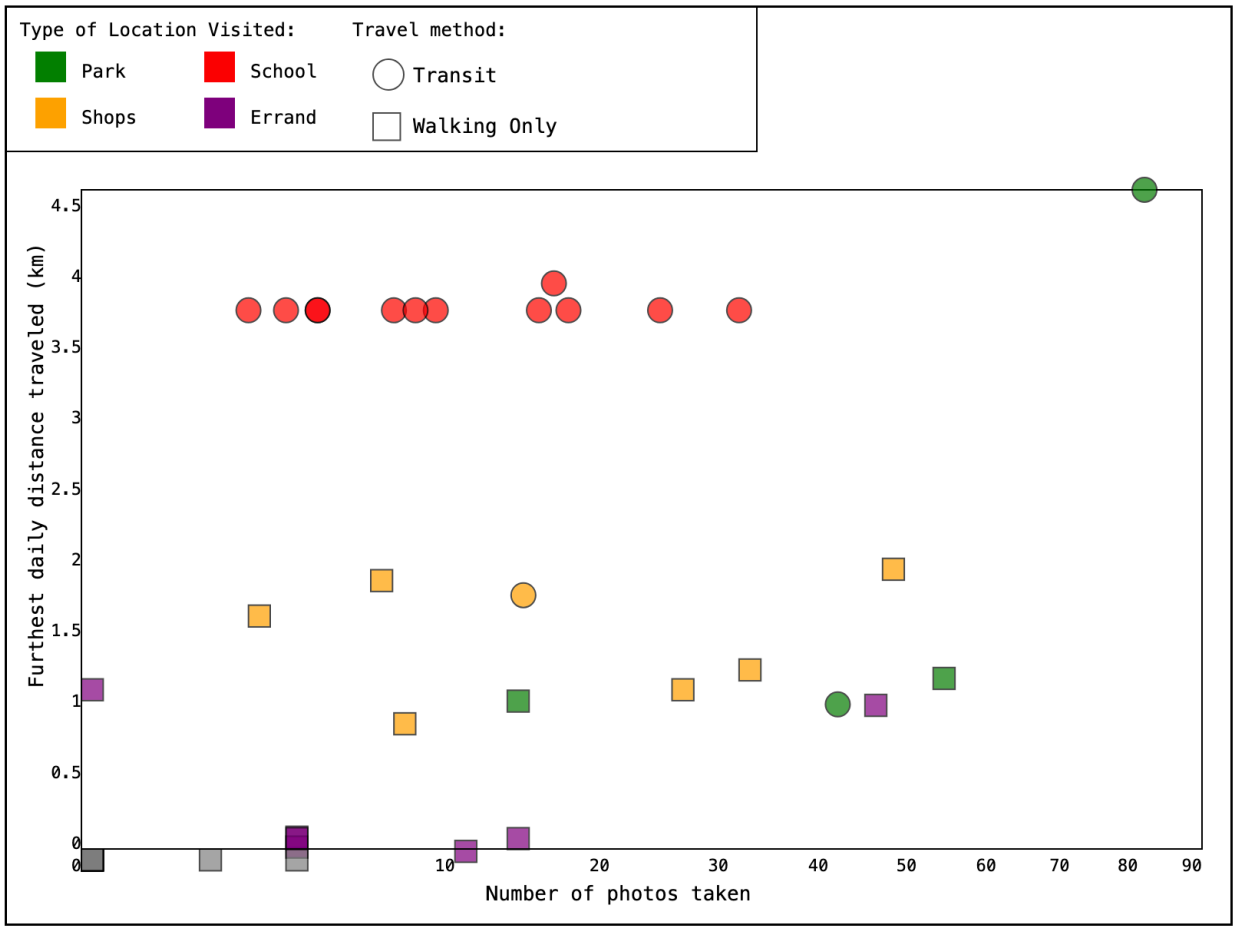
3.1 Data Exploration Process



I began with a basic scatterplot of my two key variables: *photos* vs *steps*. It looks like **the number of photos I take increases with the number of steps I walk**.

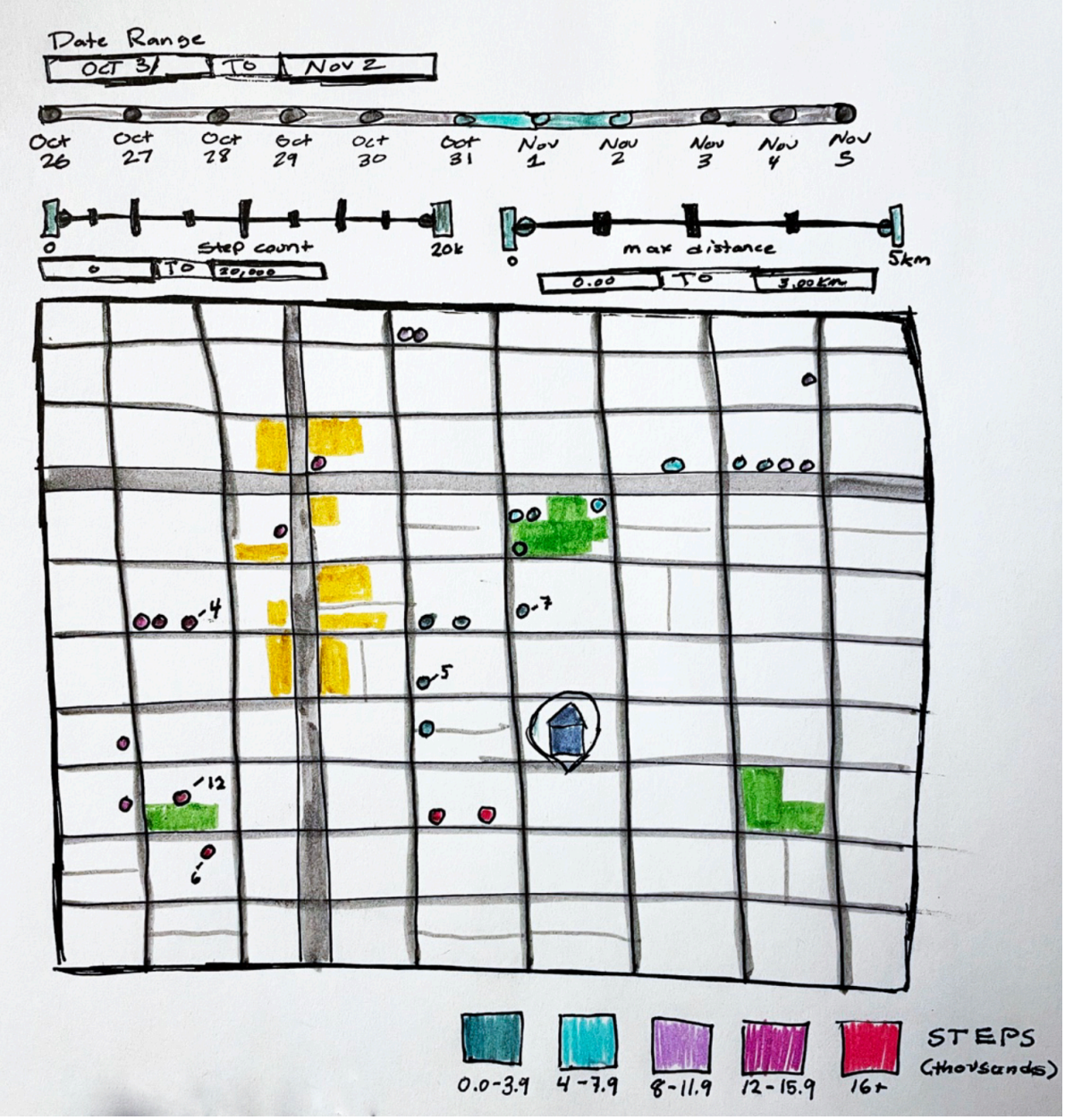


Then, I added another factor, scaling the size of bubbles by *precipitation quantity*. **On rainier days, I take fewer photos and walk fewer steps overall**.



While I had initially suspected that taking transit would lead to fewer *photos*, this *transit* vs *max distance* exploration suggests that **photo count may benefit from use of short-to-medium distance transit rides to walkable locations** just outside of my immediate neighbourhood. This will allow me to access and photogenic destinations without committing to an entire day trip across town.

3.2 Visualization Ideation



I am especially interested in mapping my data, so this was inspired by an example I found in a Medium article[1] that combines geolocation data with a photo heatmap.

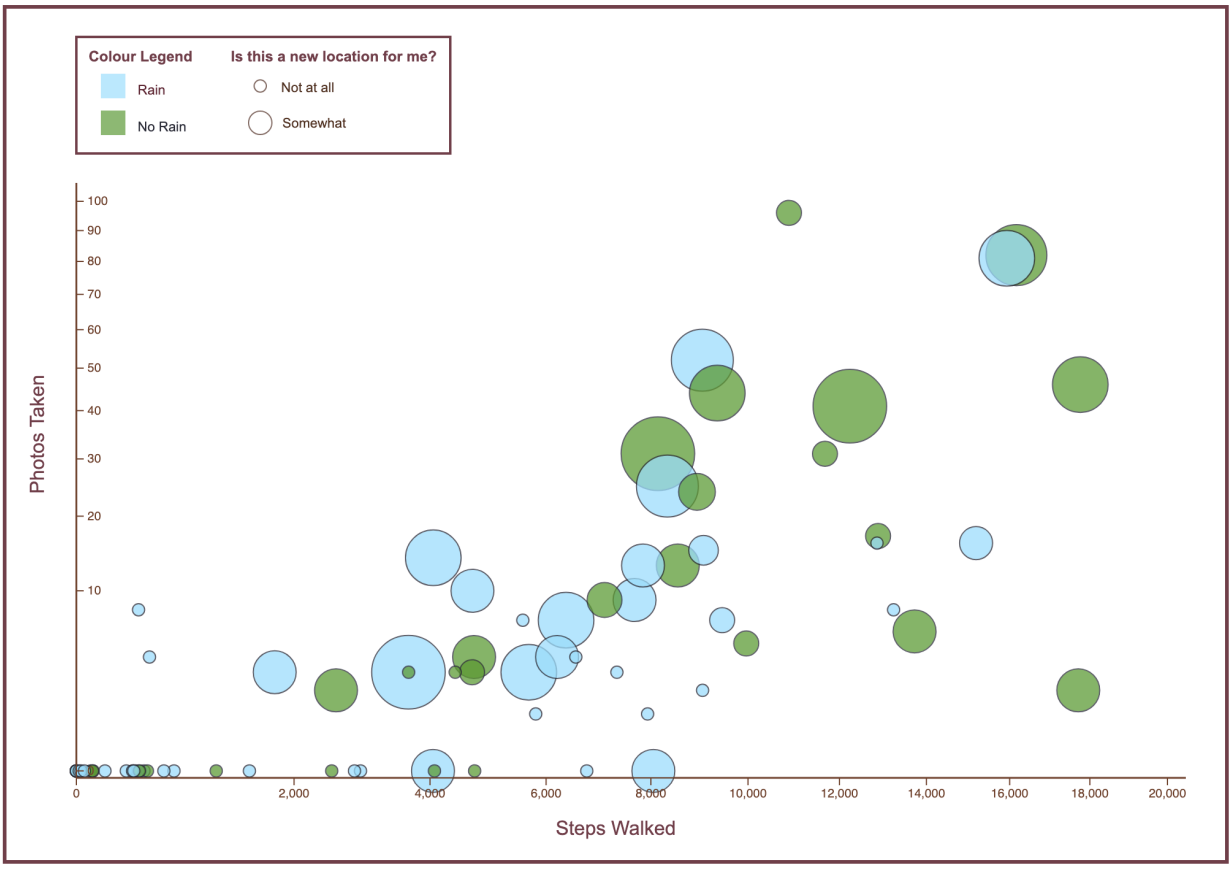
I know that my choice of walking route matters, and the act of *exploring* new locations (vs. simply traveling efficiently from point A to B like when commuting) is a major driver of increased photo counts. A map does a much better job representing how geographical variability impacts on photo counts than a scatterplot, and I prefer that visualization format for this reason.

Nonetheless, since I didn't have time to extract and map coordinate data from my photos, I opted for a scatterplot. I also think the scatterplot does a good job of showing the relationships within the data I *do* have, which will help with future photowalk and research planning.

I'd considered implementing a correlation matrix for the sake of developing a more technically advanced visualization. In my experience, a correlation matrix is useful for viewing, at a glance, which variables may/may not contribute to the outcome you're examining. Since I my data exploration process was already complete by the visualization stage, I decided to privilege interpretive clarity over technical fanciness. For similar reasons, I opted not to implement tooltips or other non-essential interactions.

In the end, I wanted the data to stand on its own.

4. Final Visualization



4.1 Overview

For the final visualization, I returned to the basic *steps* versus *photos* plot, and included *precipitation* as a simple boolean colouring (without regard to quantity). I scaled the circles according to my average level of familiarity with the locations I visited that day.

4.2 Results

My final visualization supports my primary hypothesis: *as I walk more, I take more photos.* I also tend to take more photos and steps when visiting locations that are unfamiliar to me.

I was surprised to find that not only do I take fewer steps and photos when it rains more, I also tend to leave the house less on rainy days, regardless of rain quantity. Even when visiting new locations, if it is a rainy day, I usually take far fewer photos overall.

I conclude that I should plan ahead to take advantage of sunny days to visit parks and other attractions I haven't been to before.

5. Future Directions

5.1 Alternate Pathways

In the future I want to collect and analyze more granular data, including:

- specific walking paths taken,
- photos taken per location/walking path,
- hours of daylight,
- sleep/wake times,
- and hours spent on homework.

Those all turned out to be major contributors to photo/step count that, unfortunately, were either not feasible or anticipated as relevant upon project initiation.

While I know that I take a lot of photos at parks, I am still not certain if the novelty or the ...“parkiness” plays a larger role. I would like to explore this more in practice.

During the experiment, I noticed that on high step/high photo days, sometimes I would want to take more photos, but my phone battery would die. And sometimes, a high step day that includes 1 or more unfamiliar locations would involve a hectic schedule, leaving not much time to take photos.

I’m curious what the photo/step data would look like if I primarily used my DSLR camera to take photos instead of my phone. On one hand, it’s bit bulkier and less spontaneous to use than a phone. On the other hand, I bring that camera (with extra batteries and SD cards) when I’m specifically planning/expecting a photo excursion, which might lead to higher daily and max photo counts (probably closer to 200).

I also believe there are diminishing returns at a certain point, and would like to find the optimal distance-versus-novelty balance. I know it’s not sustainable to take 100+ photos or walk 20,000 steps every day, so I want to experiment more with using transit to facilitate photo counts. That might mean getting off at a random stop along a usual route, finding a novel route to a familiar location, or creating a transit route to a destination within 1-2 km of where I live.

5.2 Possible future topics

Aside from Apple Watch/Health data, I have previously collected data about my drum practice. Notably, I’ve tracked my metronome beats per minute progress on rudiments (i.e. rolls, paradiddles, etc). I find that the more I practice, the more I progress, which motivates me to practice even more (...arguably to the point that I’ve overdone it...). However, I have sometimes gotten sidetracked from linear progression due to a chronic wrist injury that sometimes affects my ability to practice consistently.

I won't be visiting many parks until the rain subsides, but since I'd like to maintain the momentum/inspiration from the photo walk research, I will turn my focus towards measuring drum progress. My immediate goals are to increase speed, fluidity, and clarity across various rudiments while staying fully relaxed, develop strength and dexterity in non-dominant hand, and refine performance on the songs I've been learning this quarter. I think it would be useful to explore how to moderate my practice habits to achieve a sustainable pace. This would include examining variables like:

- practice/play time in hours,
- practice/play intensity,
- session content (e.g. warmup, technique practice, learning songs, composition, band/ensemble practice, performance, etc. and specifics + duration of each),
- days skipped,
- injury name, injury location, type (acute vs chronic), and severity;
- mood (may correlate with intensity?),
- and materials (e.g. stick size, wood type, special features [if any]; playing surfaces [e.g. snare head, practice pad, pillow, knee, etc]).

I hypothesize that allocating limited short, less intense practice sessions focused solely on warmups and technical work will reduce risk of repetitive stress injury. I also hypothesize that spending longer sessions on primarily song and group practice will let me continue enjoying the practical rewards of the technical practice.

Finally, I suspect that adjusting materials to session type (e.g. using lighter sticks for technique practice, or coated 5A/B sticks feel for long play sessions) will help balance progress and motivation while reducing the risk of chronic injury. However, the non-preferred feel of lighter 7A sticks may reduce my motivation to play, while the heavier (my preference) but also coated sticks may increase risk of blisters.

Besides the practical information I might gain about how to try being (maybe kind of slightly at least a little bit) less hardcore about my practice routine, I think this less uniform kind of dataset would lend itself well to a more creative type of visualization.

This could be an opportunity to implement a symbolic calendar view, or perhaps a song chart (to draw inspiration from Martín's sheet music writing visualization). Another—quite lateral—interpretation would be to have the aforementioned variables to define the terrain, enemies, powers, and rewards in a platformer game, such that one could literally play through my daily practice progress (possibly inspired by Runner 2).

I'm excited to do a pilot run of data collection on the drum practice over the next three weeks and see where I can go with this.

6. Works Cited

1. Cherepansky, Pavel. “Visualising Photo Geolocation Data Using Python.” *Medium.Com*, Better Programming, 8 May 2022, medium.com/better-programming/visualising-photo-geolocation-data-using-python-73ac47059112.