



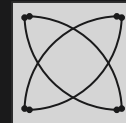
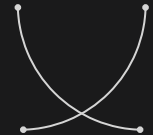
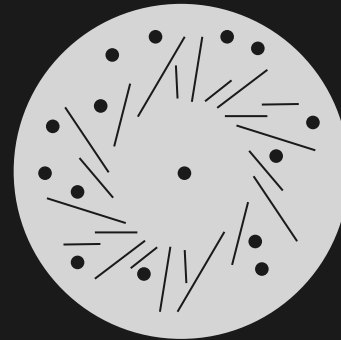
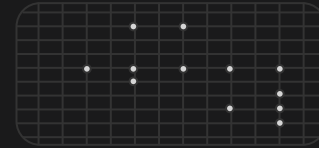
# Grad student life: Cost of Living @UBC

## Explainer Article

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Devyani M, Tommy N, Carol H

CPSC 547 |



Vancouver Sun

## B.C.'s university, college students scrounging to pay for it all

Inflation has driven up the prices of nearly everything, making it ... The AMS Food Bank also recently asked the Greater Vancouver Food Bank...



News 1130

## Debt: Canadians concerned amid inflation | CityNews ...

CityNews Vancouver spoke to one woman from Richmond, B.C., ... nothing to do with how much rent costs or how much inflation is or gas costs.



# Problem

News 1130

## B.C. inflation changes grocery shopping habits | CityNews ...

Jess Pirnak, a registered dietitian in Greater Vancouver, says with the high cost of food, we can't afford to just throw money away.



Georgia Straight

## Gasoline prices spike to near \$2.34 per litre in Metro Vancouver

Higher retail gasoline prices have the potential to boost inflation, which stood at 7 percent across Canada in August on a year-over-year...



- Difficult living in Vancouver on CS Grad stipend
- Vancouver is expensive
  - \$2,500 for 1-bedroom
  - 7% increase in food price in 2022
  - 8.8% inflation in 2022
- UBC CS graduates' stipends between \$19,000 - \$33,000
- To focus on academics or making money?

# Visualization goals

1

**What are students' current financial situation?**

2

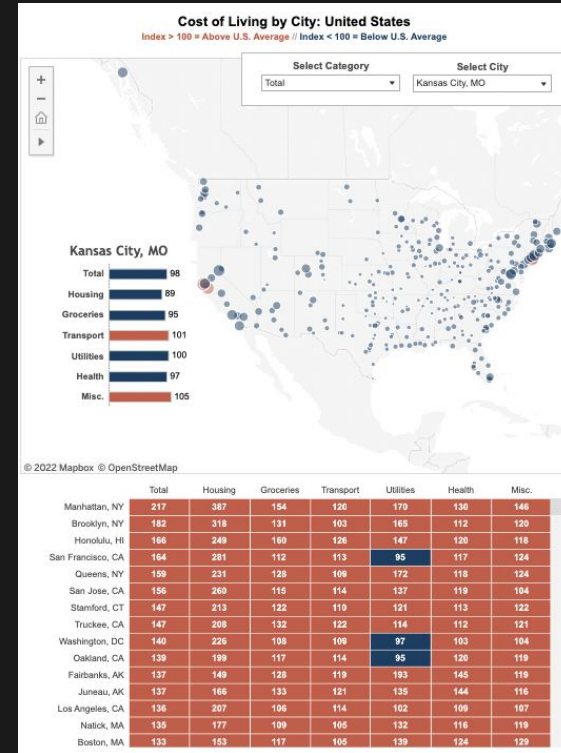
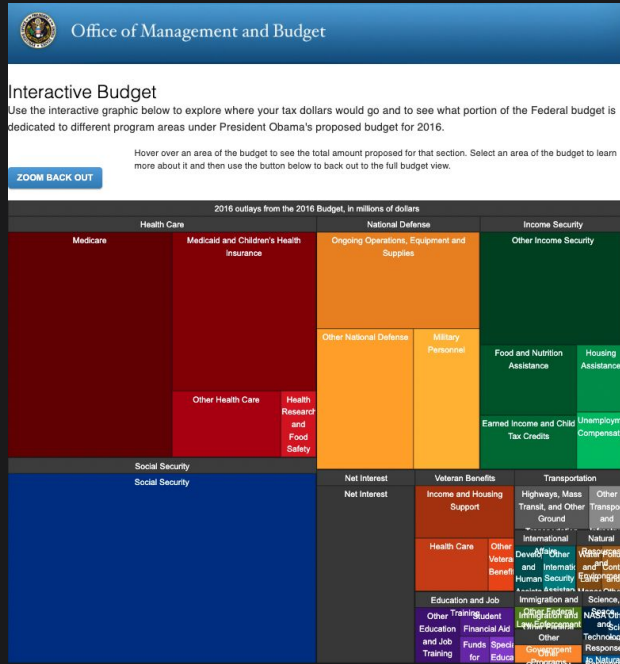
**How can we characterize the current cost of living in Vancouver?**

3

**How does UBC compare to other universities?**



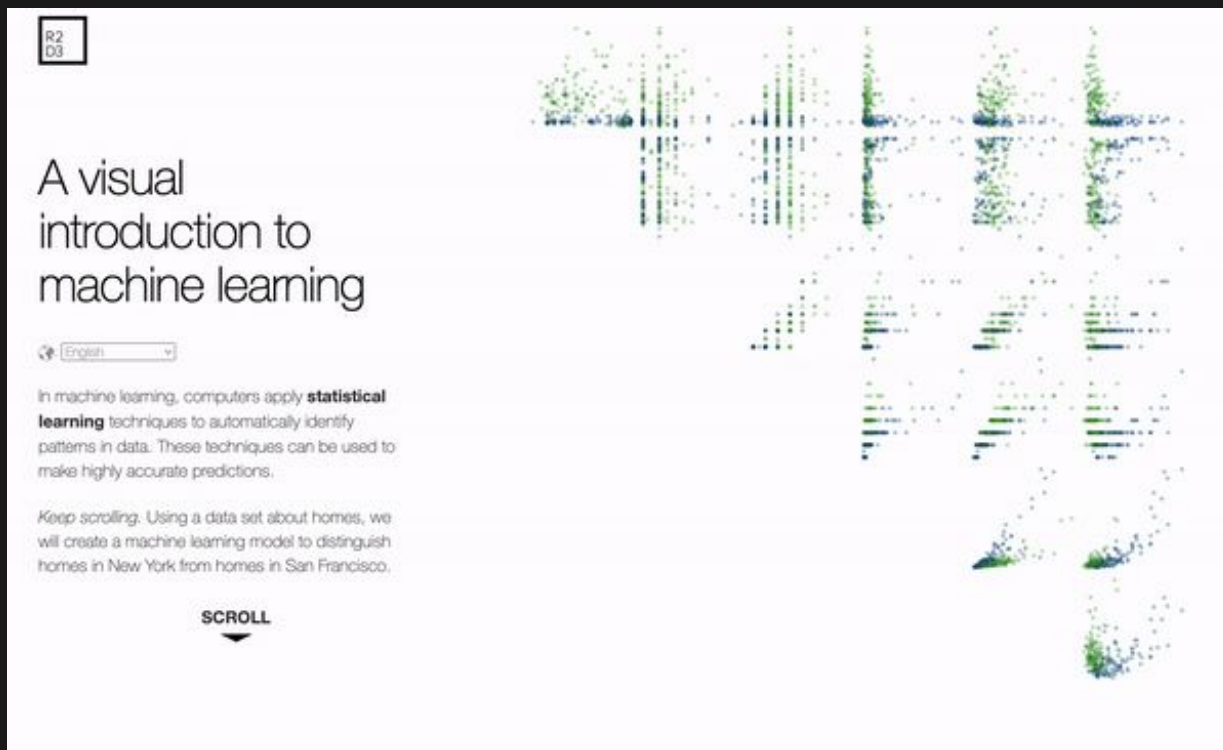
# Current Approaches



## Obama Administration Interactive Budget

## Geographical based approaches

# Explainer Articles



The screenshot shows a webpage with a title "A visual introduction to machine learning" and a language dropdown menu set to "English". The main text explains that machine learning uses statistical techniques to identify patterns in data. A "SCROLL" button with a downward arrow is visible. The right side of the page features a large, abstract visualization of data points in green and blue, arranged in a grid-like pattern.

R2  
D3

## A visual introduction to machine learning

English

In machine learning, computers apply **statistical learning** techniques to automatically identify patterns in data. These techniques can be used to make highly accurate predictions.

Keep scrolling. Using a data set about homes, we will create a machine learning model to distinguish homes in New York from homes in San Francisco.

SCROLL

*(scrollytelling)*



# Data - Cost of Living Report

- January 2022 survey
- Anonymous reports
  - 94 grad students
  - 15 CS research areas
- Highlighted concerns:
  - Inflation
  - Food prices
  - Rent
  - Tuition
  - Quality of life

Extra hours of work per week

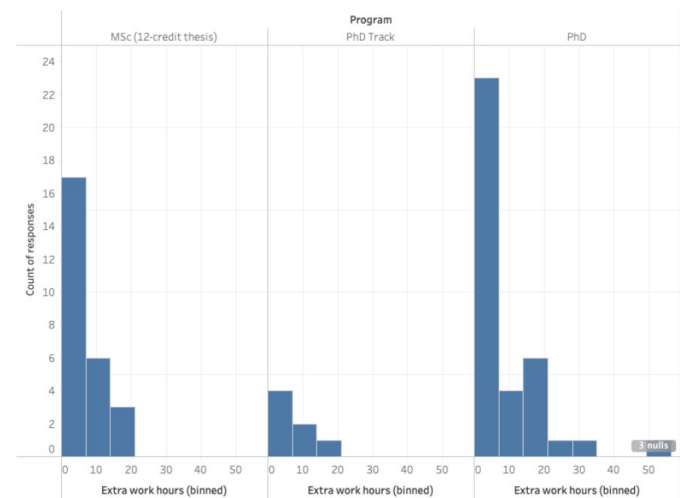


Figure 28: Extra work hours a week (aside from RAship and TAship, N = 25).

# Data - Cost of Living Report



1

## Basic Expenses

*Commute, food, health, housing, tuition, etc.*

3

## Life Contexts

Contextualizes personalized conditions

5

## Workload

*For potential or other employment*



2

## Quality of Life

*Gifts, pet, travels, etc.*

4

## Funding Sources

*For graduate students*

6

## Safety Net

*If/how one is able to manage current finances*



# Data - Inflation in Vancouver (2022)

## Grocery prices in Canada continue meteoric ascent, rising at fastest pace since 1981

*While overall inflation moderated in August, the cost of food purchased from stores was up a staggering 10.8 per cent compared with a year ago.*



The Canadian Press  
Brett Bundale

Year	Annual inflation
2013	1.4%
2014	1.6%
2015	3.4%
2016	4.5%
2017	11.9%
2018	4.8%
2019	5.2%
2020	-0.8%
2021	1.2%
2022	8.8%

<https://vancouver.ca/home-property-development/annual-inflation-index.aspx>





# Data - Cost of living vs funding



Cost of living in  $X$  city

Stipend offered by  $y$   
university



UBC  
University of Toronto  
MIT  
McGill  
ETH Zurich





# Our Solution



[Github link](#)



## CPSC547 2022WT1: UBC CS Grads Cost of Living

### Welcome!

In May 2022, some UBC Computer Science (CS) graduate students distributed surveys to the other students in the department to determine how well students were being supported by their current stipends. This explainer uses the survey data, and data from government and university websites to demonstrate the current cost of living situation in Vancouver (as of Dec 2022), see how students are being supported, and compare your own budget to that of an average CS graduate student. Scroll through the article for more information!

## Grad student life: Cost of Living @UBC

"I am more stressed now about my financial situation than during my undergrad when I had to take out loans."  
"The cost of living in Vancouver is unmanageable." - Quote from student.



So what expenses does a UBC CS grad student have?

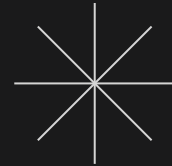
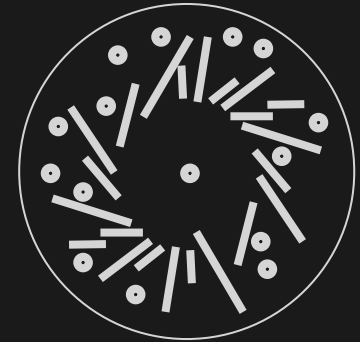
Depending on the total expenses of a CS graduate student, the






# DEMO

[Github link](#) 





# Strengths

- **Interactivity**

- Allows for more engagement to strengthen understanding of data
- Readers can engage with visualization with their own financial data for more insightful comparisons

- **Scrollytelling**

- Makes data more accessible to the average reader
- Walk readers through a narrative that is accentuated by data and converge on a call to action



# Limitations & Lessons Learned

- **Explaining derived data is difficult**
  - How to properly explain CPI?
- **Not all data may be accurate**
  - Cost of living & stipend amounts from other universities outside of BC
- **Unclear how "effective" visualizations are**
  - No formal or informal user testing was conducted
- **(unsurprisingly) D3 is hard**



# Future Work

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- **Further interactivity**
  - Allowing users to interact with the tree map
- **Creating comparison budget checker**
  - Allowing users to compare their full budget against an "average" CS grad student
  - Allowing users to add their own data to the data set





# Contributions

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- Providing easy to understand visual characterization of current CS grad students' financial situation
- Explaining financial data in an accessible "explainer" format





# UBC CS Graduate Cost of Living

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*Thank you!*

