



This is a graded discussion: 6 points possible

due Apr 3 at 4:29pm

Hospital Discharge Prediction Tool Case Study [Videos 1.4–1.7 and Discussion 1.2]

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****There are four videos and one discussion on this page. Please scroll down to view and complete them.***

Video 1.4: Defining Models (11:08)

In this video, Retsef digs deeper into the function and use cases of models within data science and analytics.

Live Support

For additional context on the SIR Model, please see the following resource:

The SIR Model (<https://classroom.emeritus.org/courses/9054/files/2338611?wrap=1>) 
(https://classroom.emeritus.org/courses/9054/files/2338611/download?download_frd=1)

Video 1.5: Hospital Discharge Prediction Tool Case Study: Part One (7:04)

Next, Retsef introduces a real-world case study centered around a hospital system he has worked with in Boston, Massachusetts (USA). This use case illustrates how using data and models can enable the design of an improved and intelligent process.

Video 1.6: Hospital Discharge Prediction Tool Case Study: Part Two (6:33)

In this video, Retsef continues to explore the processes that take place from the moment a patient is admitted, until they are discharged and wraps up this case study with some key takeaways.

Video 1.7: Quantitative Model to Describe the Patient Progression Toward Discharge (4:21)

In this video, Retsef utilizes the concept of clinical milestones and barriers to represent the process of patient discharge in an entirely new way.

Discussion 1.2: Collecting Data and Signals [20 minutes]

Learning Outcome Addressed:

- Discuss the ways in which data/signals are generated.

****This is a required discussion and will count toward course completion.***

Data is being collected constantly, and how organizations have collected data on consumers has changed quite a bit. In the past, consumers would pay with cash and their data would be tracked by handwritten records. Then, with the adoption of credit cards, organizations would use POS

(Point of sale) data to track their purchases. Now, with online retailing, organizations can sense what customers have viewed, searched for, clicked, etc.

In this discussion, think about some of the ways data (apart from retail) is collected around you in your daily life. How is the data produced, who owns it, and what are some benefits it can provide?

Thinking about the retail example, how might the process of collecting this data have changed or evolved from the past?

Be sure to read the statements posted by your peers. Engage with them by responding with thoughtful comments and questions to deepen the discussion.

Suggested Time: 20 minutes

Rubric: Discussion 1.2

Criteria	Exceeds expectations	Meets expectations	Below expectations
Thoughtful and complete response to the question(s)	4 pts Fully responds to the question(s), post is supported by connections to the reading and real-life examples, and post makes additional connections to the field of data engineering with novel ideas, critical thinking, or extensive application of how to use the topic in future work.	3 pts Fully responds to the question(s), and post is supported by connections to the content or real-life examples.	0 pts Partially responds to the question(s), or connections to the content are missing or vague.
Engagement with the learning community	2 pt Posts thoughtful questions or novel ideas to multiple peers that generate new ideas and group discussion.	1.5 pts Asks questions or posts thoughtful responses to generate a single peer's response.	0 pts No responses to peers or posts minimal or vague responses to peers that do not motivate a response (e.g., "I agree.").

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[← Reply](#)**Manjari Vellanki** (<https://classroom.emeritus.org/courses/9054/users/231480>)

Mar 27, 2024



I would like to discuss some of the examples how data is collected in our daily life.

1. One way is the data that is collecting through CC Cameras that are installed to achieve safety and security purposes by tracking un authorized activity or criminal activity.
2. Another way is that is collecting through web mapping platforms helps us understanding the traffic flow and to figure out route planning.
3. Another way is the data that is collected through surveys. For example a survey conduct on Smoking vs Non Smoking people helps to analyze how smoking is one of the major cause in patients suffering from lung cancer.
4. Another way is the data collecting the weather conditions which helps to plan our day effectively according to hot and cold weather conditions.

By considering retail example, collecting the data is very useful for online retailing by considering highly viewed or highly bought products and make it available in inventory with a competitive price as it is easy for online customers for cross comparing the prices across other websites.

[← Reply](#) **Victor Flores** (<https://classroom.emeritus.org/courses/9054/users/197659>)

Apr 1, 2024



Hi Manajri,

Related to point # 3, I agree interviews may provide significant information; however, they will not have much value unless they represent all possible smokers coming from all

possible demographics. I believe, the inclusion of demographics can leverage a more quantitative approach capable of becoming a crucial input for a model if included.

← Reply 



Manjari Vellanki (<https://classroom.emeritus.org/courses/9054/users/231480>)

Apr 1, 2024

Hi Victor-

Of course!

By conducting a survey and collecting the data means it includes all the details as part of study which requires to take informed decisions and that includes Demographics as well :)

← Reply 



Chris Cosmas (He/Him) (<https://classroom.emeritus.org/courses/9054/users/226607>)

Apr 3, 2024

Hello Manjari,

CCTV cameras are constantly tracking the world around us but it seems to me that it would be quite difficult to interpret the data. It is not as easy to visualize as the other examples you have given, web, surveys, and weather conditions. It seems it would require a much more complicated and lengthy analysis to deduce any fruitful conclusions.

Please correct me if I'm wrong.

← Reply 



Yossr Hammad (<https://classroom.emeritus.org/courses/9054/users/229118>)

Mar 27, 2024

For instance, my smart watch. it records my heart rate, my physical activities, calories intake and my sleeping hours.

It collects all these data through sensors on my wrist and my input. these data could be shared with our health providers for better diagnosis and for health monitoring but the user is the

owner of the data.

Another example i see beneficial is the GPS, waze application for example, it collects the data from my input (destination, location). The owner of Waze owns all the data and it could be beneficial in predicting traffic, improving service and recommending better/faster routes.

collecting data changed to be more data driven, and involved high technology than just old traditional methods.

Edited by [Yossr Hammad \(https://classroom.emeritus.org/courses/9054/users/229118\)](https://classroom.emeritus.org/courses/9054/users/229118) on Mar 27 at 6:59pm

← [Reply](#) 



Javier Di (<https://classroom.emeritus.org/courses/9054/users/226884>)

Mar 29, 2024

Great insights. It does seem like the Smart Watch data could be applied to a predictive model in the watch that could predict your health and also insurance companies to price policies, etc. That sounds like a very interesting application by doing an algorithm of heart rate, sleep and activity.

← [Reply](#) 



Timothy Andrew Ramkissoon (<https://classroom.emeritus.org/courses/9054/users/226697>)

Mar 29, 2024

Interesting, I didn't consider the possibility of data from fitness apps being shared with insurance companies to provide better premiums or packages though I'm not aware of this being something that's actively done with any of the insurance companies.

← [Reply](#) 



Yossr Hammad (<https://classroom.emeritus.org/courses/9054/users/229118>)

Mar 31, 2024



Hello Tim,

I am not sure that it is shared automatically with health insurance. It could be an option health insurance can look into in the future, however, i know that there is a feature in the smart watch enabling sharing health data with primary care which definitely helps in better diagnose and monitor the patients health.

 Reply **David Taylor** (<https://classroom.emeritus.org/courses/9054/users/233381>)

Apr 1, 2024

Insurance companies would LOVE to get their hands on that data!! Hopefully that type of data-sharing is not happening though. That would be a major breach of privacy law. Always read the fine print! (or don't and just be warned haha). I think sharing with medical professionals would be a huge benefit for diagnostic purposes, but insurance companies are different altogether. Without including personally identifiable information (PII) this type of data is relatively innocuous, but combining medical data with PII and selling it off would, of course, be a hugely controversial topic

 Reply  (1 like)**Yossr Hammad** (<https://classroom.emeritus.org/courses/9054/users/229118>)

Apr 1, 2024

I agree David,



Insurance companies would be very much interested in such data to increase prices on clients based on their health conditions. In this case it would not be neither helpful nor beneficial to us (users).

 Reply **Roy Nunez** (<https://classroom.emeritus.org/courses/9054/users/229552>)

Apr 1, 2024

Good point Yossr. A smart watch can offer many benefits as you mentioned for health diagnosis. It can be used to also tailor recommendations geared to help one improve your health. Like nudges to work out, which some do already, but many other things that users can opt into where the recommendations can be more assertive especially when used in tandem with other metrics.

As far as Waze, I agree and I feel like it is better than other GPS products because they are collecting real time data on users and able to detect traffic patterns and recommend alternatives.

 Reply  (1 like)

**Victor Flores** (<https://classroom.emeritus.org/courses/9054/users/197659>)

Apr 1, 2024

Hi Yossr, thanks for elaborating on daily examples. I strongly believe a big portion of our society has not inferred yet how data derived from using a watch or a GPS can improve our life's quality. Although data is constantly being produced, it is not always being properly captured and hence it is not capitalized. It would be interesting to see societies receiving the impact of well managed data used for reducing illnesses and deaths and providing people better living standards.

← **Reply** (1 like)

**Haitham Farag** (<https://classroom.emeritus.org/courses/9054/users/233864>)

Apr 2, 2024

Good day Yossr

Your smartwatch point has a eureka effect!

One's mood in many cases affects behaviour, like facial expressions could be used to assess to a certain degree mood. However, in time physiological measures e.g. heart rate, skin temperature or other signs (of interest) could be picked by a smartwatch. Then triangulating browsing history, with changes in those measures and click/s (action or purchase), would build individual profiles of each person's barriers and decision triggers regarding online marketing campaigns.

Edited by **Haitham Farag** (<https://classroom.emeritus.org/courses/9054/users/233864>) on Apr 3 at 7:17am

← **Reply**

**Haitham Farag** (<https://classroom.emeritus.org/courses/9054/users/233864>)

Mar 28, 2024

Ways data (apart from retail) is collected in daily life

- Internet usage and interest
- different used devices (mobile, Laptop, TV...etc)

- device usage patterns
- daily travel or commuting pattern-related

How is the data produced, who owns it, and what are some benefits it can provide?

The data are recorded and harvested from

- the different cell service towers along the commuting route taken
- internet service providers,
- internet/applications such as web browsers and online content viewing platforms (e.g. YouTube and social media).

A benefit could be more tailored notifications (ads) that connect interest (e.g. Chinese food) with current location (e.g. near me) and meet my preferences (e.g. open buffet or discounts). This would be similar to what one of the key dating apps offers, but with a focus on offered alternatives for a product or service of interest that are within proximity.

Furthermore, triangulating all this data with clicks and data from electronic payment methods (e.g., Google Pay) would be invaluable in developing an organic individual spending pattern model with improving precision. Many credit card issuers utilise the actual purchasing history towards a similar purpose.

I am not certain of the *legal ownership* of such data. However, given that this data is being used

- in GPS applications to provide directions and location,
- to hone targeted ad placements in the different applications,
- to recommend certain content (videos or articles)
- credit rating assessment

it is plausible that the favourite web browser company has access to that data.

process of collecting this data have changed or evolved from the past?

Previously this data would have been collected through traditional marketing research techniques (decision-maker and opinion leader surveys). Those approaches would have been much less accurate and probably at a higher cost than the currently offered possibilities.

Edited by **Haitham Farag** (<https://classroom.emeritus.org/courses/9054/users/233864>) on Mar 28 at 12:35pm

← Reply 

○



Javier Di (<https://classroom.emeritus.org/courses/9054/users/226884>)

Mar 29, 2024

⋮

Thinking of targeting advertising as a great application of this, which in my case is incredibly accurate through Instagram in predicting which products I am likely to buy and interested in from the products I have been browsing. Very interesting

← Reply 👍



Lee Lanzafame (<https://classroom.emeritus.org/courses/9054/users/231975>)

Apr 8, 2024

Great examples, I work at a telco and triangulating data from cells would be awesome but there are so many privacy issues in our country for doing this. We used to have Bluetooth/Wifi beacons that did something similar but we ended up not using the data due to privacy. Is something like this allowed in your country?

← Reply 👍



Turki Alghusoon (<https://classroom.emeritus.org/courses/9054/users/229165>)

Mar 28, 2024

Satellite/navigation data

I am fascinated by the evolution of GPS navigation over the last 2 decades and how it has changed many aspects of our life. Some of those changes were foreseeable and some were not. I remember as a child watching my uncle use a paper map to navigate around a new city. Fast forward to the present time, I can issue a voice command to Google Maps, and get the optimal directions to reach my destination, taking into account traffic conditions, tolls, and driving preferences. Such a utility was made possible through analysis of massive volumes of data that has been available with advances in IoT, enabling models to identify trends and patterns which could then be utilized to provide fairly accurate predictions on the optimal routes and expected trip durations. I imagine the data is being generated through smart phones or navigation devices, and it is most likely owned by the providers of the navigation services (e.g. Google, Garmin...etc.)

In addition, the widespread use of smart phones has allowed for real-time tracking of traffic conditions and “volume of flow” for any given location. Not only has this allowed for real-time feedback on changes in traffic conditions (and recommendations for better alternative routes), it has also provided insight for decision-making in the business world. For example: gas station

companies can now utilize traffic data to select new locations where traffic is heaviest, increasing their likelihood of attracting more businesses.

Edited by [Turki Alghusoon \(https://classroom.emeritus.org/courses/9054/users/229165\)](https://classroom.emeritus.org/courses/9054/users/229165) on Mar 28 at 7:32pm

← [Reply](#) 



[Javier Di \(https://classroom.emeritus.org/courses/9054/users/226884\)](https://classroom.emeritus.org/courses/9054/users/226884)

Mar 29, 2024

That is a very interesting insight to develop a predictive model on the volume and profitability of the gas station based on the GPS tracking data. Very interesting idea

← [Reply](#) 



[Javier Di \(https://classroom.emeritus.org/courses/9054/users/226884\)](https://classroom.emeritus.org/courses/9054/users/226884)

Mar 29, 2024

Retail:

In the past, when paying in cash for transactions there was data from handwritten notes of the purchases and prices for different products based on notes taken by the retailer employees and customers were anonymous as the cash used didn't have their name attached to it. Nobody knew who had purchased what as transactions were conducted in cash but there were still handwritten notes of the purchases. This data was held closely by the retailers that took the hand notes and not available publicly in a centralized system or for purchase.

With debit and credit cards, transactions are conducted through POS terminals and there is a record for all transactions by name, amount spent and products purchased. The Data is owned by the Credit Card/Debit Card companies (Mastercard, Visa, etc). Some actually sell this data through 3rd party online data marketplaces and though their in-house Data & Services division, giving access to consumers data and information

When shopping online, search sites like Google or the Retail online websites will get all the information of what consumers browse, purchase and shop for. Data is produced by online browsing, electronic and physical transactions.

Data is owned by the online sites/ browsers, credit and debit card companies and retailers. Data can provide immense insights into consumer behaviors, tastes and which products sell better, when and why. The process of collecting data has shifted from manual and handwritten to online and automatic. Customers are also no longer anonymous as their payment methods

are tied to their name and no longer anonymous as it was with cash circulating without names tied to it.

In my field in investing, many Quant firms purchase data to track sales for particular products or Ecommerce platforms where you can get a close approximation of the Sales Volume for a quarter and if you can estimate margins, then the earnings of the company. It is helpful to get this data as it provides additional information and significant info that the companies themselves don't publish otherwise

Edited by **Javier Di** (<https://classroom.emeritus.org/courses/9054/users/226884>) on Mar 29 at 1:34am

← **Reply** 



Turki Alghusoon (<https://classroom.emeritus.org/courses/9054/users/229165>)

Mar 30, 2024

Hi Javier,

You bring up an interesting use-case in using E-commerce platforms' sales data as input to evaluate performance. I am curious to know how quant firms use the results of such analyses: do they use them to inform M&A decision? stock purchases?

← **Reply** 



Roy Nunez (<https://classroom.emeritus.org/courses/9054/users/229552>)

Apr 1, 2024

I work in a space where the data is shared through third party aggregators so I am particularly interested in your post. I did not consider Quant firms also using this aggregated transactional data to estimate margins. As I work in this space I keep thinking about different use cases for this kind of data.

← **Reply** 



Lawrence Lumague (<https://classroom.emeritus.org/courses/9054/users/225055>)

Mar 29, 2024

Example Scenario:

If you vote for a specific councilman in office, your data could be used to match your interests regarding events or other interests aligned with that party. For example, a person voted for an elected official in your town that is aligned with the preservation of historical monuments and historical buildings.

The decision to vote this specific official may have this preservation group make use of data in the form of personal address, to send a survey and gather information. The submitted survey, in turn, could send mailed invitations to events that correspond to a supporter's interests. An example to this could be an invitation to a museum where a lecture on the history and appreciation of architectural style from around a hundred years ago could be featured, with attendance of the person you voted for or one of his representatives. One can also be invited to a dinner event to a building that is featured with an older architectural style in danger of demolition. This can be example of the qualitative models in gathering data on general interest for measuring support. Afterwards, a predictive model could be used to plan for more successful events while omitting less successful ones in venues that support this cause.

What can be seen is that the qualitative model could be used for this historic preservation group to showcase to the public what is being done to drive towards historical conservation. On the other side of things, a quantitative model could be placed in motion to gauge the attendance of how many people go to these events supporting the view on historic preservation. The quantitative approach could also measure involvement of a person or group of people and their attendance to events. This, in turn, could serve councilman's party on finding potential citizens who could categorize moderate and major supporters of their cause on the basis of their level of involvement and their presence at events. Furthermore, application of quantitative models can be useful for this historical preservation group in finding new potential monetary donors willing to give support contributions to their party.

The collection of data, in this scenario, can act as a bridge that correlates the relationship between public interest and public support. This in turn could lead to the creation of laws or ordinances that protect historical buildings. When to implement this will be determined by examining the readiness to do so based on the number of supporters who will be present to vote for it in the following years.

← Reply 



Dawn Prewett (<https://classroom.emeritus.org/courses/9054/users/233112>)

Mar 31, 2024

Your example highlights how qualitative and quantitative data models can significantly influence political campaigning and public engagement. This is especially pertinent in

scenarios like the one you described, where voting preferences and event attendance can guide targeted outreach efforts.

Drawing a parallel to your point, Facebook's historical use of interaction data to infer political stances underscores the broader implications of such data practices. Although they may no longer make these inferences publicly visible on our personal profiles (not sure if anyone recalls those data points), the very act of categorizing political affiliations based on online behavior reveals the profound impact of data analysis on privacy and individual autonomy. When I discussed the accuracy of these predictions with friends, it was noted that the predications ranged from eerily precise to laughably off-mark. This variance itself offers a glimpse into the complexities of data-driven insights.

As we approach a significant election here in the US, the precision of these data models have improved and with it, amplified concerns about the models influence on voter behavior and the democratic process. It raises critical questions about the balance between targeted political engagement and the preservation of voter autonomy. If predictive models can accurately anticipate voting preferences, could the sanctity of the electoral process be in danger?

← Reply 



Chris Cosmas (He/Him) (<https://classroom.emeritus.org/courses/9054/users/226607>)

Apr 3, 2024

Hello Dawn,

You raise a very interesting thought, social media platforms have come under great scrutiny in recent years for stoking the fire in political discourse and affirming this polarization we see in the media these days. As you mentioned these platforms are becoming more and more accurate and their algorithm seems to hit the mark with every swipe. This raises tensions as each group receives information that only confirms their beliefs, I have read the word "echo chamber" too many times now on different articles and podcasts. As algorithms aim to keep consumers as long as possible on their platform for maximum viewership it also entails strong societal effects which affect us all.

← Reply 




Dawn Prewett (<https://classroom.emeritus.org/courses/9054/users/233112>)

Apr 3, 2024

You're absolutely right about the significance of the "echo chamber" effect. I recall a conversation during the last election where someone was genuinely surprised that there were votes for the opposing candidate, simply because they hadn't personally encountered any supporters. This phenomenon has indeed become a pivotal aspect of social media, steering us toward more divisive landscapes.

What I find equally fascinating, though, is how the same algorithms that contribute to these echo chambers can also have positive outcomes. For instance, there are numerous stories of people finally finding answers to long-standing health mysteries. By engaging with certain content and communities, the algorithms guide them toward information that aligns with their symptoms or experiences, leading to revelations about undiagnosed conditions that led their doctors to finally be able to help them.

Social media is truly a double-edged sword, where the very features that narrow our worldviews can also expand our understanding in ways we never anticipated.

← Reply  (1 like)



Lee Lanzafame (<https://classroom.emeritus.org/courses/9054/users/231975>)

Apr 8, 2024

100% about the echo chamber effect, I notice this a lot with facebook groups and instagram, there is also so much miss information, I find people on youtube re-create someone elses video to get views then all of a sudden there are 10+ videos talking about the same miss information. MH370 videos are a prime example.

← Reply 



Roman Jazmin (<https://classroom.emeritus.org/courses/9054/users/225803>)

Mar 29, 2024

The discussion for today is how data is generated and collected around us. One way is by our I.P. address that our computers are assigned to when we are connected to the internet. No matter where we go on the internet, our travels are being logged and stored by browser companies like Google. How is this useful? Well, if you have a family with many kids, you would want them to only to those sites that are family oriented and kids safe. There are online

applications that parents can use to restrict their kids from viewing certain websites based on their own I.P. address.

Another case is when you join or browse a social media sites like YouTube, every video clip you viewed, commented on, and like or disliked are being tracked. Even every ad that you view, click on, and even purchase from is also being logged. How is this useful? Well, based on your clicking, viewing, and purchase habits, social media sites can provide relevant ads, video clips or content to present to the person to enhance their viewing experience when they are on sites like YouTube.

← Reply 



Jignesh Dalal (<https://classroom.emeritus.org/courses/9054/users/229173>)

Mar 31, 2024

Hi Roman, Thank for sharing insights to being tracked and how targeted ad can be shown to individuals based on multiple factors IP being one of them. Application wise Youtube being one of the app that has so much of data that suggestions algorithm with ad is so much for kids and adults to keep a tap on is next to impossible. Privacy is of a concern where every click is being collected as a data point and other aspect of inter app transmission of data sharing.

There are few solutions like VPN access, Apple devices where app tracking question is asked to allow tracking or not to allow tracking.

Edited by **Jignesh Dalal** (<https://classroom.emeritus.org/courses/9054/users/229173>) on Mar 31 at 5:29am

← Reply 



Timothy Andrew Ramkissoon (<https://classroom.emeritus.org/courses/9054/users/226697>)

Mar 29, 2024

I'm currently on a journey to improve my health and fitness. In order to do so, I employ a smartwatch and various fitness tracking apps.

My workout routine is detailed in one of these apps, and as I'm working out, the app tracks the progress of the workout.

The app would track:

- exercise variation
- duration per exercise

- difficulty
- sets/supersets
- muscle group
- etc.

As I'm performing these exercises, I have my smart watch track my vitals (heart rate, SPO2, stress, etc.).

For the fitness app, the workout routine is created by me (the end user) and the app can also generate routines based on information that I would have provided about myself. The data from the smart watch is captured with the various sensors that the watch my have (heart rate monitors, accelerometers, gps, etc.). This data is then analyzed and processed to provide insights into my steps taken, exercise duration, calories burned and sleep patterns.

This information allows me to keep track of my health and fitness progress and decide whether to continue with the same routine or to make changes that would create better results.

As for who owns this data, as it's my personal information I would be the one that owns the data but as someone that's never read the TOS, I can't say for certain, I'd assume certain information is sold to third-parties for personalized ad purposes. Also, these apps would take critical/key points from my data for their analytics on user activity to improve services that the app may provide.

← Reply 



Mhelissa Yayalar (<https://classroom.emeritus.org/courses/9054/users/233590>)

Mar 30, 2024

Hi Timothy,

The use of fitness data have also significantly changed the way companies provide benefits to their employees. With the evolving business environment and rising costs, employers had to become creative in reducing the cost of health & insurances benefits for employees. Harnessing the fitness or health data from employees provided a way for companies to track health information, such as smoking habits, pre-existing conditions, weight, etc. Companies like, mine, uses this type of data to not only increase the insurance cost of employees but they also use it to drive positive behaviors, by offering additional benefits. For instance, if the employee is known as a smoker, the employer encourages the employee to register for a specialized "quit smoking" program.

-my

 **Reply** **Mhelissa Yayalar** (<https://classroom.emeritus.org/courses/9054/users/233590>)

Mar 30, 2024

An example of ways some data is being collected today is through hospitality loyalty programs. Specifically, hotel chains like, the Hyatt customer loyalty program, collects all types of demographic information from their members, including their favorite things to do or activities, preferred rooms, preferred number of beds or floors. They also collect information to cater for special needs, such as accessibility or service pets. In some cases, some hotel chains even collect their members personal financial status, like if they rent or own a home or how much their household income is. At face-value, this information seems a bit intrusive; however, it's all part of the different ways they cater to their members. I think the hospitality business are really taking advantage of this, in terms of trying to have their members keep coming back or stay at their hotels.

Over the years, when limited information were collected through paper forms at the hotel, they use the information to send brochure or flyers of their upcoming promotions. Now, with much more insights about their members, the hotels, like Hyatt, offers different tiers of membership that treat their members differently. For instance, some of the membership would require you to spend perhaps 10 days to claim the “free” rewards, while some hotel chains, only need their members to stay for two nights to acquire one free nights stay.

The evolution of data collection from loyal programs also resulted in the personalize customer experience. For instance, after each stay, hotels generate automated follow-up communication to their customers to help them improve their business, like tracking the amenities that they used during their stay. I think that because of this new way of modeling customer behaviors during their stay, it enables the hospitality industry to provide curated services that are popular with their loyal customers, like free breakfast, coffee, wifi, etc.

 **Reply** **MATT DEFREITAS** (<https://classroom.emeritus.org/courses/9054/users/220100>)

Mar 30, 2024

Mhellisa,

The evolution of how companies use data and how they use it today is truly something that interests me. I can only imagine how difficult it would have been without the use of digital

technology to establish loyalty programs such as this. If I frequently traveled the world and stayed with the same brand of hotels in the age of paper, I don't think I would have been treated as I would be today only because of the lack of visibility to my loyalty.

Do you find that loyalty programs and or the various levels of loyalty to be a driver in customer retention?

← Reply 👍



Mariana Flores (<https://classroom.emeritus.org/courses/9054/users/237198>)

Apr 3, 2024

Hi Mhelissa, so nice to meet you. Great post, loyalty programs have truly enhanced data collection and enriched the customer experience by allowing businesses learn more about their customers to personalize products and services. I agree with you in that at first this degree of data collection does seem a bit intrusive but done through an anonymized data privacy compliant manner Personal Identifiable Information (PII) is kept secure while both businesses and customers are able to enjoy the benefits of data-driven personalization.

Loyalty programs and data are fascinating – thank you for sharing.

← Reply 👍



MATT DEFREITAS (<https://classroom.emeritus.org/courses/9054/users/220100>)

Mar 30, 2024

In my opinion, data is produced through fundamental processes via consumer actions. The key to the production of this data is understanding when actions are taking place. Let's use this class as an example. While owned by the those hosting the class, there is probably a system logging our clicks and site visits to understand student behaviors. Based on those behaviors those actions can be used to model out a student's probability of being successful in the classroom. As Retsef mentioned in the first video "Every model is merely an approximation of the real world, and it's never 100% precise." Due to this, there would always be outliers, but you could glean insights such as "students who successfully watch 2 out of 3 videos in the classroom tend to score well on their discussion vs those that only watch 1". Completely made-up statement, but the data is produced so that observers can understand what actions are being taken and when those actions are taken and then use historical behaviors to make predictions and recommendations. The benefit to a model such as this is that you could provide student support and create outreach strategies for those likely to struggle.

Leveraging the example above, a model like this would be too reactive. In a traditional university, we wouldn't be able to understand who is reading the required readings. The only input available to us would be the actual output of receiving a grade. In that case, the stress would be placed on reading the required materials with the hope of influencing those struggling but the messaging would be too wide and not directed toward those who truly need the support.

← Reply 👍



Todd Engle (<https://classroom.emeritus.org/courses/9054/users/228910>)

Mar 30, 2024

I am currently involved in a Web 3.0 side project that makes me think about how the implementation of Web 3.0 over the next decade will change the way data is collected, stored, and used.

Currently, Web 2.0 is heavily centralized. Large tech companies like Google, Tick-Toc, Netflix, Amazon, and Meta own and control most of the data collected on users. This data is primarily collected through user interactions with websites and apps, often without explicit consent. Transparency of the data collected and how it is used is very low. **Users have limited control over how their data is used and shared.**

Web 3.0 has the potential to flip the script. **Users will own their data and have more control over how it's collected and used.** Within the Web 3.0 social media application our associates have developed, the user data is decentralized using blockchain technology. This allows users more transparency into what data is collected and for what purpose. **The user also has the opportunity to choose what data is collected and is rewarded for the use of that data.** Privacy-preserving technologies will be used to minimize the amount of data collected and ensure anonymity where possible. This is where regulation comes into play.

Here are some ways data collection might eventually evolve in Web 3.0

Blockchain or similar technology will be used to create secure, decentralized data storage solutions. This would prevent any single entity from controlling user data and sharply decrease the event of data theft. User data will be treated like a commodity, allowing the user to generate income using products, platforms, and systems. For example, a decentralized application (dApp) for streaming movies would allow the individual/entity with the rights to the movie, to safely tokenize and post it on the decentralized streaming platform with a dynamic viewing price using smart contracts. The price would be lower for individuals willing to give out elements of their sovereign data and more expensive for those who wish to remain private.

The downside to this equation is that those users with more money would stay more obscured while those with fewer means will always be part of the larger data pool.

In the Web 3.0 environment, users will be able to easily transfer their data between different platforms and applications. This increases competition and gives users more control over their data. Through a **tokenized data exchange**, users, companies, non-profits, and government organizations, might be able to sell or exchange their data for tokens or other digital assets.

This could create a new **data marketplace** where users have more control over the value of their data and can monetize it. No longer would you need to pay a centralized organization for data analysis, instead you would pay micropayments for each data element you extract from the decentralized tokenized data exchange.

Overall, Web 3.0 *has the potential* to revolutionize data collection by putting users back in control of their data. However, there is a long way to go with user adoption, and there are still technical and regulatory hurdles to overcome before this vision becomes a reality. Still, I find it intriguing and exciting.

← Reply 👍 (2 likes)



Lee Lanzafame (<https://classroom.emeritus.org/courses/9054/users/231975>)

Apr 1, 2024

great example

← Reply 👍



Shahrod Hemassi (He/Him) (<https://classroom.emeritus.org/courses/9054/users/224267>)

Apr 1, 2024

Love this example Todd! I did not realize that there would be ways to control the usage of your data in Web 3.0. It's very interesting. Being able to monetize the use of your data is great. I suspect that some people will value their data more than others and may be able to justify the higher value due to them being a more valuable "target" for specific marketing purposes, etc. It will be interesting to see how that plays out and how different user groups may be able to justify different prices for their data. Curious to hear more about this.

← Reply 👍



Diego Milanés (He/Him) (<https://classroom.emeritus.org/courses/9054/users/228518>)

Apr 1, 2024

Hi Todd

I only have to say that I'm thrilled to see that in Web 3.0 people are taking serious actions on data privacy. I hope it soon evolves into a reality.

← Reply 👍



Manjari Vellanki (<https://classroom.emeritus.org/courses/9054/users/231480>)

Apr 2, 2024

Interesting example :)

Thanks for sharing !

← Reply 👍



Jignesh Dalal (<https://classroom.emeritus.org/courses/9054/users/229173>)


Mar 30, 2024

It's clear that data collection has changed dramatically in the last few years. Beyond the retail sector, the thing that has impressed me the most is are Smartphones and Wearable Devices.

Our smartphones and wearable devices (like fitness trackers and smartwatches) collect a wide range of data, from health metrics (steps taken, heart rate, sleep patterns) to location history and app usage statistics. The data produced is owned by the device manufacturers or app developers (But you can also retrieve most of this data, I do it a lot). This data can provide immense benefits, including personalized health recommendations, tracking of fitness progress, and even early warnings about potential health issues.

For example, I take a look at my routes on Google maps and I keep track of the time I have spent driving. But there are other areas that are impressive, like when I look for a product on Google and then I have an ad of that very same product appearing on my Facebook feed. It's clear that somehow all data is being shared and I'm very targeted very precisely with what I want to buy.

To close, I haven't yet figured out how I feel about this, it's ruining my privacy but it's very efficient at showing me what I want.

← Reply  (2 likes)




Shahrod Hemassi (He/Him) (<https://classroom.emeritus.org/courses/9054/users/224267>)

Apr 1, 2024

Hi Jignesh. Yes, I too have mixed feelings about the capture of my google searches for marketing purposes. I have friends who want 100% privacy but to tell you the truth, I like seeing how the algorithms may be applying to me and getting some targeted advertisements based on my google searches.

I like the increased usage of data capture from wearable devices, but this is one area where I feel like I would want privacy over the data captured from my wearables. I think it will be interesting when we have affordable wearables that can improve our form in sports activities and maybe can detect heavy strain on our joints in advance of injuries.

← Reply  (2 likes)



Diego Milanes (He/Him) (<https://classroom.emeritus.org/courses/9054/users/228518>)

Apr 1, 2024


Hi Jignesh

Thanks for sharing your experience. I feel a bit the same. However, I must admit that in my case, the constant monitoring and tracking with wearables has facilitated and improved life in many ways: faster fitness goals achievement, time optimization, injury prevention, etc...

On the other hand, the feeling is a bit different when I'm speaking with my wife about holidays in a given place, and then I check Instagram and immediately I'm targeted with some advertisement about the place we were talking about a few minutes ago. Call it a coincidence, but the feeling is not good.

It is like there are 'good' and 'bad' monitoring.

Thanks

← Reply  (1 like)



Mariana Flores (<https://classroom.emeritus.org/courses/9054/users/237198>)

Apr 3, 2024

Hi Jignesh, so nice to meet you. I'm with you in that data collection has evolved immensely through digitalization and I also haven't exactly figured out how I feel about the extent of such efficient personalization. Part of me thrives on the benefits of data collection and an enhanced customer experience while also being a bit apprehensive because it is all just so precise. I think knowing if it is done following a privacy compliant manner where Personal Identifiable Information (PII) is kept secure and through the guidelines of GDPR and CCPA would personally allow me to focus solely on all the great benefits of data-driven personalization.

Data privacy and personalization are such interesting topics – thank you for sharing.

← Reply 👍



Isabella Tockman (<https://classroom.emeritus.org/courses/9054/users/207395>)

Apr 6, 2024

I feel the same way you do. It's pretty cool how we can do things like grocery shopping with just a tap on our phones and get what we need so fast. But it also feels a bit weird to me. It's like things aren't as simple as they seem. These big companies know a lot about us. Sometimes, if I talk about something near my phone, I end up seeing ads for it when I go online. I read in the news that Google had improperly collected data while people were browsing privately in incognito mode. It makes me wonder, do these companies have limits on what they can do with our info?

← Reply 👍



Roy Nunez (<https://classroom.emeritus.org/courses/9054/users/229552>)

Mar 30, 2024

Your transaction data, along with your net worth, debt, assets can be used to provide personalized recommendations, credit card incentives, credit card jumps, influence loans, etc. Previously data was collected manually and now data is collected digitally and shared across financial institutions more than ever before.

Today with banking systems integrating into an open banking system, the landscape has changed and expanded, now providing a more comprehensive view of a client's financial

health from aggregate sources. The aforementioned data and more can be aggregated to help benefit consumers as mentioned previous and additionally provide tailored wealth management insights/advice and improve fraud detection.

← Reply 👍 (1 like)



Jignesh Dalal (<https://classroom.emeritus.org/courses/9054/users/229173>)

Mar 31, 2024

Thanks for sharing insight into daily finances how those are helping bank keep tap on individuals and understanding the money systems created by financial institutions. This changes also helps individuals for any sort of support if someone is looking at bank to help them.

Person who is earning good but does not have finance background, banks have systems in place to help individuals in cases of support and help with finance management.

← Reply 👍 (1 like)



Dawn Prewett (<https://classroom.emeritus.org/courses/9054/users/233112>)

Mar 31, 2024

The integration of technology into our daily lives has made data collection a constant presence. Devices from smart refrigerators to fitness watches are collecting vast amounts of data about our habits, locations, and even our moods. This ubiquity of data collection often makes it feel as though technology is always listening, especially when ads for recently mentioned items mysteriously appear in our feeds. This isn't just coincidence; it's a testament to the depth and breadth of data being analyzed and utilized, often including information about our interactions and preferences.

While the vastness of collected data can seem alarming, it's important to consider who truly owns this data. Is it the individuals who generate it or the companies that collect it? Although we might not own the collected data outright, we certainly have a stake in its protection and use, emphasizing the need for clear privacy protections and the option to opt out of data collection when desired. Regulations like GDPR and CCPA reflect a growing awareness of these issues, aiming to balance the benefits of technology with the rights of individuals.

As AI and ML technologies evolve, they amplify the value of this data, pushing the boundaries of what's possible—from predicting consumer behavior to potentially foreseeing health crises

before they occur. This raises profound questions about the balance between technological convenience and privacy. For instance, while my smartwatch's health monitoring features are useful, I'm cautious about how this data might be used beyond my personal health insights, wary of it leading to unsolicited health advice or product recommendations.

Navigating the fine line between data's utility and invasiveness is a critical challenge for those of us working with ML. We must consider where to draw the line between leveraging data for meaningful advancements and respecting individual privacy. For example, if predictive models can anticipate health emergencies, how do we responsibly act on this information without overstepping personal boundaries?

This ongoing dialogue is essential as we explore the future of data collection and utilization, striving for a balance that respects both innovation and individual rights.

← Reply 👍

○



Chris Cosmas (He/Him) (<https://classroom.emeritus.org/courses/9054/users/226607>)

Mar 31, 2024

⋮

It is well known at this point that digital apps collect monumental amounts of data on consumers nowadays. Apps such as Google Maps collect location data on a regular basis. I happened to fall down a rabbit hole in my Google account settings one day and ended up finding an itinerary for every location I was going to and the amount of time I was spending there for the past year or two. Google Maps uses GPS data to track our locations utilizing a method named triangulating, satellites communicate with our phones which keeps track of our movement as the signal is updated as we move. The Google Maps app also often sends me a multiple choice question when I am using public transport asking me if the Tram, Metro, or Bus is busy or not and asks me to indicate how full it is. The data is collected by Google and aims to provide better traffic data for its users so other consumers might avoid traffic jams or be made aware if their favorite pub or restaurant is too busy at the moment. This collection of data could also allow Google to ameliorate its trip recommendations as it tracks what ways are more efficient and how long it takes time for different people to arrive at their destination. This data collection also enables Google to provide us with personally tailored recommendations on places we might visit or favorite routes we would like to use. It also allows the company to push local ads to the right consumers which benefits local businesses looking to advertise their products and services. If it happens that the data is also shared with city officials and urban planners they can make more informed decisions by understanding the movements of people and areas that might need further development. This is a massive change from the past as virtually all individuals holding a phone with the Google Maps app are constantly tracked this

mass data collection gives increasingly more accurate data to decision-makers as opposed to previous estimations. A while back I was in training with a foreign governmental organization where we were discussing data collection methods for travel purposes, the trainers gave us an insight into a model that they developed internally for tracking their population count as well as tourists coming in via SIM cards and cell towers. Phones regularly send pings to nearby cell towers which can be tracked by their operator. The government agency contracted the main operator of their country to get data on all SIM cards that were going into their territory. Sim cards that would enter the area and stay for more than two weeks were used as a proxy for residents of the territory, while sim cards that came into the territory and left within two weeks were used as a proxy for tourists coming into the country. This model allowed the government agency to have highly accurate data on the number of travelers that were in the country at any time which allowed them in turn to perform calculations on important economic metrics. Previous to the model the country would employ border patrol workers to count the amount of cars coming in and out of the country as well as collect data from ports and airports. This proved to be tedious work and could easily be prone to human error.

← Reply 



Ahmad Abu Baker (<https://classroom.emeritus.org/courses/9054/users/234460>)

Mar 31, 2024

Your deep dive into Google Maps and its data collection practices is quite enlightening. It's fascinating how our everyday tools like Google Maps can accumulate such detailed data, providing insights not just for personal convenience but also for broader societal benefits. The transition from manual data collection methods to sophisticated digital tracking reflects a significant shift in how we understand movement and behavior in our spaces.

The example you mentioned about using SIM cards and cell towers for tracking population and tourist flow is particularly intriguing. It's a smart use of existing technology to gather accurate data efficiently, bypassing the limitations and inaccuracies of manual counting. This not only streamlines the process but also offers real-time data that can be crucial for economic planning and development.

This evolution in data collection methods underscores the power of technology in transforming our approach to information gathering. However, it also raises questions about privacy and consent, as these methods often operate in the background, unnoticed by most people. How do you think we can balance the benefits of such detailed data collection with the need to protect individual privacy?

← Reply 

**David Taylor** (<https://classroom.emeritus.org/courses/9054/users/233381>)

Apr 1, 2024



I'm also intrigued by the SIM card example, in this case regarding privacy concerns. I know in a lot cases, this type of data is "anonymized" to a certain degree. I would imagine (or rather I would hope) that government is not getting personally identifiable information (PII) from the SIM card providers. To the extent you said this data is used as proxy for real numbers, it seems like PII is not involved.

This is an excellent example of how the massive amount of data phones create are not always tied back to an individual level (although they certainly could be). I think in many jurisdictions PII would be attainable only with a court order, but sadly I'm sure in some places those consumer protections are not in place.

[← Reply](#) **Chris Cosmas (He/Him)** (<https://classroom.emeritus.org/courses/9054/users/226607>)

Apr 2, 2024



Thank you for your replies Ahmad and Taylor, the example came from a European Institution which I am sure follows consumer privacy laws, it wasn't specified to us the specific data points that were gathered but the model collected data on an aggregate level. You both raise a legitimate concern about privacy rights but I also believe Governmental Organisations have a legitimate claim to certain data to ensure sound policy-making. Decision-makers require a certain access level to perform research which in turn translates into beneficial laws and allows decision-makers to implement economic strategies that are aligned to the economical and social situation of their country.

[← Reply](#) **Haitham Farag** (<https://classroom.emeritus.org/courses/9054/users/233864>)

Apr 3, 2024




Very insightful point Chris...Data is a very powerful tool that can be used for an array of intentions or to serve different interests.

A few years back I learned about a European marketing company that had cancelled a lucrative contract with a "government". Because it came to the company's attention that

their assessments of that government's national sentiments (measured on a social network) might have been used to target certain individuals.

"with great power comes great responsibility"

Edited by [Haitham Farag \(https://classroom.emeritus.org/courses/9054/users/233864\)](https://classroom.emeritus.org/courses/9054/users/233864) on Apr 3 at 7:33am

← [Reply](#)  (1 like)

○



<https://classroom.emeritus.org/courses/9054/users/234460> **Ahmad Abu Baker** (<https://classroom.emeritus.org/courses/9054/users/234460>)

Mar 31, 2024

⋮

In our daily lives, we are constantly creating and coming across data, much more than just when we shop. Let's think about how this happens in many ways.

Our smartphones are a big source of data. Every time we use them, for calling, texting, or using apps, we create data. The companies that make these apps and phones collect this data. They use it to make our phones and apps work better for us, showing us things we like or might want to buy.

Then, there's social media, where we post, like, and share things. The social media companies keep track of all this and use it to figure out what we enjoy. This helps them show us more stuff we might like and helps businesses know what to advertise to us.


Health gadgets, like fitness trackers, are also collecting data. They keep an eye on our health and activity. The companies that make these gadgets can use this data to give us advice on staying healthy or to make their products better.

In our homes, things like smart thermostats and security cameras are gathering data too. They learn how we live and use this information to work better for us, like saving energy or keeping our homes safe.

Even when we travel, data is collected. Whether we use GPS, ride-sharing apps, or public transport, our travel patterns are tracked. This helps manage traffic better, improve public transport services, and plan city development.

The way we collect data has changed a lot over time. It used to be done by hand and was slower. Now, with digital technology, it's faster and we can get much more information. This can help improve many things in our lives, but it also makes us think about privacy and who owns this data.

So, data is everywhere in our lives, helping make things better and more personalized. But it's important to remember the need to protect our privacy and use this data in a good way.

← Reply  (1 like)



Lee Lanzafame (<https://classroom.emeritus.org/courses/9054/users/231975>)

Apr 1, 2024

I currently work at a telecommunications company and we use a product from Adobe to track screen clicks, mouse moves, pages views and many more attributes that speak to a customers behaviour. This helps us make data driven decisions. We also have workshops, focus groups and use design thinking to identify issues and improvements in our products based on real world examples. This data is collected, grouped, sorted and prioritised. We have many data lakes that take all of these outputs and store them to disk which analysts can then use when building/improving products.

Adobe Omniture is the product we use that records screenclicks, mouse moves etc. The software is integrated in a range of products. Data ownership might change depending on the country. I would generally say Adobe owns the data but Australian privacy laws most likely make the telecommunications company or end user own the data.

Using the retail example, the process of collecting this data in the past is very different. Data was mostly provided by handwritten records, which was delayed from when the actual transaction occurred, it may have required manual entering in a computer system / excel spreadsheet. Cheques and cash would have to be cleared or taken to the bank to be added to someone's bank account, so cashflow/sales data wouldn't have always been known immediately.

← Reply 



David Taylor (<https://classroom.emeritus.org/courses/9054/users/233381>)

Apr 1, 2024

I didn't know Adobe made a product like that, but of course it makes 100% sense to me. It seems like a pretty helpful tool. I wonder if Adobe integrates this technology into its own products. I looked at Omniture briefly, and it looks like they use machine learning and AI to help power this software! Maybe after this course one of us can get a job there! haha :)

Edited by **David Taylor** (<https://classroom.emeritus.org/courses/9054/users/233381>) on Apr 1 at 6:19pm

← Reply 👍



Priscilla Annor-Gyamfi (<https://classroom.emeritus.org/courses/9054/users/226376>)

Apr 2, 2024

Great post Lee. Looking at the process of collecting data in the past clearly outlined in your post, I just thought of the amount of time needed to simply process these raw data into useful data to even begin any form of analysis on them. That would be draining and time consuming.

Thanks to technology, these data are easily collected pretty much in a more decent format than in the past. They may go through some form of preprocessing but would not take as much time due to effective tools now available to enhance the process.

← Reply 👍



Victor Flores (<https://classroom.emeritus.org/courses/9054/users/197659>)

Apr 1, 2024

Let's us quickly review how the measurement of television ratings has evolved throughout time. The National Museum of American History suggests that when TVs were just introduced, research companies such as A. C. Nielsen relied on primitive technologies such as the audimeter in order to analyze what audiences preferred to watch. Interviews also played a critical role in identifying the preferred choices of TV watchers. Although both approaches gave some valuable insights and yielded to elemental conclusions, they were not precise (source: https://americanhistory.si.edu/collections/nmah_1072675 (https://americanhistory.si.edu/collections/nmah_1072675)).

As new devices such as cellphones, tables and the internet got established, they enabled users to access TV content in so many different ways. It then became essential to ensure precise measurements were captured. Nielsen Company denotes 3 components which are critical for conducting TV ratings measurement exercises: a data source that represents all audiences, technology to correctly distinguish among data, and metrics (source: <https://www.nielsen.com/insights/2023/how-to-measure-tv-audiences/#:~:text=To%20measure%20TV%20audiences%2C%20you,viewing%20data%20for%20all%20stakeholders>) (<https://www.nielsen.com/insights/2023/how-to-measure-tv-audiences/#:~:text=To%20measure%20TV%20audiences%2C%20you,viewing%20data%20for%20all%20stakeholders>)). With the internet, digital technologies, and all communication channels

available nowadays, TV producers and marketing firms can certainly measure ratings very accurately which can in turn assist for making wiser business decisions and maximizing revenues.

The incorporation of the internet and digital technologies has also facilitated television networks to understand and satisfy the demand of content across the World for specific TV content: cartoon, soap operas, movies, sports, music, etc and corresponding audiences. As we know, the internet allows an individual to watch any event or content at any time of the day independently of the geography and time zone. By studying and analyzing TV ratings, TV networks and producers can make smart decision and define where most resources should be spent. All this derived from data owned my marketing firms, research companies, and broadcasters obtained via different channels. Data driven decisions can also influence TV producers on decision making. It will facilitate companies to define how to make the content available, where investments should be done, along the frequency and amount of resources that should be allocated with the goal of outperforming competitor and further increase profits.

The above is a clear example of how the means to acquire data for measuring TV rating has evolved and the immediate effects if has brought.

← Reply 👍



David Taylor (<https://classroom.emeritus.org/courses/9054/users/233381>)

Apr 1, 2024

Almost every electronic device that we touch gathers information about us on some level, and a large majority of that data, at least in today's world, is stored somewhere in the cloud, ie a remote server to which we do not have direct control. Our phones, even without third party apps enabled, generate a massive amount of data.

Data generated by phones

- **location data** (via cell phone towers, also via connection to wireless networks which are mapped to physical locations). Even if "location services" is not enabled on a phone, tower data is still saved by cell service companies and IP tracking data is saved by any data company that can get its hand on it. This data is owned by the cell company, or in the case of IP data, it is easily available to any website that is visited.
- **generic phone activity data**. This bucket includes general phone usage, text message/call frequency, screen time, time spent in specific apps, etc are collected as "anonymized data" to build a model of how people use their phones. This data is owned by the phone manufacturers.

- **health activity data.** Many phones are now enabled by default to track physical activity. Increasingly complex sensors, notably accelerometers, can track the number of steps taken, distance traveled, etc. Some phones are even capable of detecting "quality of sleep" by monitoring for background sounds during the night. This info, if stored in the cloud, is likely owned by the phone manufacturer (not 100% sure on that one)
- **third party apps.** This is where a massive amount of data comes from. While a large majority of it may be retail-oriented, ie shopping history, etc, some third party apps (if settings allow) are able to access the data above, which is collected by the phone itself. This data, since consent was given via terms and conditions, is now owned by the creator of the third party app.

Benefits of the data

1. Allows companies to get tremendous insights into individuals' usage patterns
2. Allows individuals to track habits, either to monitor or to enact change in their lives

These examples also illustrate how data can sometimes be collected under less-than-explicit consent from the user. Users are generally unaware of the sheer amount of data that our devices collect. For better or for worse, it may benefit the companies that collect the data more so than the user whose data they collect. Gaining critical insights into consumer behavior can help develop more effective marketing strategies and especially can guide research and development into the next generation of devices.

Previous ways of collecting data

Location data is everywhere these days, but before the advent of smart phones, I imagine it was very limited. Collected maybe by scraping through retail transactions, toll records, etc. Much of the data mentioned above is specific to interaction with internet-connected devices, so most likely much of these data was simply not collected before at all.

Edited by [David Taylor \(https://classroom.emeritus.org/courses/9054/users/233381\)](https://classroom.emeritus.org/courses/9054/users/233381) on Apr 1 at 6:29pm

← Reply 



Priscilla Annor-Gyamfi (<https://classroom.emeritus.org/courses/9054/users/226376>)

Apr 8, 2024

Great post David. This shows how powerful data riding on technology is. Now, an individual's location is tracked and searches of places within your location is made easier with just a turn of button in the settings of our phones.

Our phones and electronic devices have now become media by which data is collected on a daily basis without us even noticing.



Shahrod Hemassi (He/Him) (<https://classroom.emeritus.org/courses/9054/users/224267>)

Apr 1, 2024

Preparations for growth in a city requires a lot of advance planning. When a city's population grows quicker than the preparation measures, many problems can arise, such as

- Lack of available/affordable housing
- Crowded public transportation
- Traffic congestion
- Crowded schools, hospitals, etc.
- Higher cost of living
- Lower quality of life
- Crime

Cities cannot just invest heavily in new infrastructure, housing, etc. without having indicators that they will have population growth to consume the additional infra, housing, etc. If the city has population growth data indicators that they trust, then they know that increased tax revenue will come from the population growth, and in turn can justify increasing their spending on new projects.

So it is very important for cities to access and analyze all the data available to them in order to keep their planning ahead of the population growth so as to avoid the problems mentioned above.

Some of the data that could be captured and used for this analysis is the following:

- Current Rate of Population growth
- Current City Rankings for Quality of Life
- Current City Rankings for Public Safety
- Cost of Living indexes (prices of common consumer items like eggs, milk, gas/petrol, etc.)
- Housing Sales market supply & demand
- Housing Rental market supply & demand
- Growth in vehicle purchases
- Daily/Weekly/Monthly Public Transport user counts (can be fine-tuned to evaluate usage of specific transport lines in specific parts of the city)
- Daily/Weekly/Monthly Public Car Parking usage numbers
- Tourism figures (hotel occupancy rates, etc.)
- Average number of passengers arriving at city airports

- Number of McDonalds and Starbucks (just kidding....kinda)

What do you all think? Any other data point or suggestions for better ways of evaluating this? I am not in this field. Just decided to use this as a topic and brainstorming about what would be good ways to gather data and signals.

← Reply  (1 like)



Ricardo Anaya (<https://classroom.emeritus.org/courses/9054/users/228915>)

Apr 2, 2024

great post, I used the waze app as an example this info can also be fed into the app =)

← Reply 



STEPHEN HUTSON (<https://classroom.emeritus.org/courses/9054/users/233645>)

Apr 1, 2024

One idea that came to mind here is the process of collecting data via sensors in automobiles, and how newer cars incorporate a lot more data and incorporate this into things like maintenance. For example, tire air pressure used to be determined by taking a physical measurement with a tool, but now cars can use sensors to automatically determine the tire pressure and when it's low/needs to be refilled. In that example the car owner is now better able to better determine when they need to add air to their tires, like when seasons change and the air pressures within tires adjust due to weather conditions. Since car manufacturers now own all this data around so many different aspects of automobiles, I would imagine they have a much better sense of how different elements of a car are performing and on a more macro level they can get ahead on potential issues in their vehicles, whereas in the past they likely had to rely on issues discovered by mechanics after problems have been encountered on a larger scale.

← Reply 



Koffi Henri Charles Koffi (<https://classroom.emeritus.org/courses/9054/users/208039>)

Apr 2, 2024

hi Stephen ,thank you for sharing , I m wondering if there can be more improvement or innovation such a way that the car can itself refill or repair itself without human intervention . if from those data a model is define and advise the vehicle to refill itself to a gas station. :)

← Reply 👍



<https://classroom.emeritus.org/courses/9054/users/228518>

Apr 1, 2024

Sensors, detectors and trackers play an essential role in modern data acquisition. Daily, I work out and try to stay as fit as possible (It doesn't mean I'm in shape :), but I try). The first thing in my morning schedule is to use the smart scale, which gives me information on weight, BMI, percentage of fat, percentage of muscles, weight of water in the body, weight of the bones, metabolism, amount of protein, fatless weight and metabolic age. All this data is stored and (given my app settings) shared anonymously with the company, but it is also used to show trends and to alert about out-of-scale quantities. Then, I wear my smartwatch, which counts steps, calories, heart rate, oxygen level, etc., and I go out running. While running, the GPS in the smartwatch tracks my position, and as I often listen to music, the music app collects data on the songs I like and those I skip, information used for future music recommendations. At this point, I haven't had breakfast yet, but I have produced a large amount of data, in this case, with information that can be used to improve my health and fitness.

I could have done the data acquisition with a manual scale or measured the running time with a regular watch, but honestly, I couldn't squeeze as much information as I'd like in this way. It is easier to monitor and control the progress of your activities with the use of smart sensors. We are moving towards a world with sensors for almost every activity, and we will monitor every aspect of our lives if we want. It is in us to profit and use that information appropriately.

I think I'm the owner of my fitness information, but I wouldn't mind (I actually do) sharing it for the benefit of others. This is not the case with other sensible data.

← Reply 👍



<https://classroom.emeritus.org/courses/9054/users/208039>

Apr 2, 2024

- Methods of data collection

Nowadays data are collect from different channel:

social media : where a huge volume of data and structured or non structured data are collected by the plateforme such as facebook , youtube , twitter amazon user exchange video , image and users share their preferences with friends.

Those data are analyzed daily to identify potential customer and advertise customer products

IOT : data also are collected from wearable devices such as apple / samsung watches that keep track of heart bit rate , and communicate human health .

- data are also collect in hospital by doctors that is shared among differents hospital

Data are also collected from survey

Owner

Those data usually when produced are owned by the owner of the platform and partially by the producer of the data .

The data produce offered various benefit:

Knowledge sharing by analyzing the data and provide advice and suggestion to the user (example apple watch that can advise user about the heart beat rate and what need to be down to improve their health)

← Reply 

○



Priscilla Annor-Gyamfi (<https://classroom.emeritus.org/courses/9054/users/226376>)

Apr 2, 2024

⋮

Data collection has undergone series of evolving over the years. Some years ago in middle school, our student records like daily attendance, class assessment and exam scores were recorded manually on paper by our teachers. But now due to the advancement of technology, data is collected through management systems, student information systems and online assessments. The data is owned by educational institutions and some edtech companies and it is effectively used for tracking student progress, identifying areas for improvement, and personalizing learning experiences.

← Reply 



Mariana Flores (<https://classroom.emeritus.org/courses/9054/users/237198>)

Apr 2, 2024

Data is being collected all around us, from smart devices like tracking exercise, mobiles, refrigerators, automobiles, work badges, maps, to social media. Data is produced digitally and through our daily activities. Whether we track a run, search for our next purchase online, map a new destination, or engage with our network – each interaction produces data. Companies and third-party providers own data. A few of the benefits data provides are personalization, seamless product features, and optimized operations. Data can help guide business decisions and enhance the user experience.

Due to digitalization the process of collecting data has been transformed immensely from the past. Loyalty programs, for example, supplement retail data collection to enhance customer profiles. Data is everywhere so much so that the term Big Data was coined to describe data's volume, variety, and velocity. This in turn has made data collection a more seamless process in certain aspects while also adding new challenge along the way.

← Reply 👍



Swati Sharma (<https://classroom.emeritus.org/courses/9054/users/236938>)

Apr 3, 2024

I totally agree how data is everywhere and how we came to Big Data. There is also the factor that we in the current world need to consider around data governance and data privacy. This has become an integral part of the data collection and consumption process. For e.g. data related to employee demographics are very sensitive and we work with several permissioning tables to accurately depict the data to the consumers.

← Reply 👍



Ricardo Anaya (<https://classroom.emeritus.org/courses/9054/users/228915>)

Apr 2, 2024

An example of Data collected every day in real life I like a lot is the app Waze

Data it collects:

1) locations of houses, offices, places of interest, routes,

2) user input data about locations, accidents, road work, hazards, weather

3) schedules, time people leave for work, school, home

who owns it?

The app (the app now belongs to Google)

how it can be used:

now it is used to save time, in the morning already ask you if you want to go to work, and in the afternoon if you want to go home.

The data of road hazards, can be fed to the city, to plan road works (analyzing where and when it happens) then the traffic patterns can also be fed to the city road work teams, to plan the work hours during the less traffic hours to be less disruptive

the planned road works and closure can also be fed directly to waze to plan routes ahead, input not only entered by users, but by city.

same to plan routes to Emergency vehicles, fed info to Other users to clear the path ahead.

already information can be sold to users, to plan routes for shopping, (if cross referenced can also plan for other activities)

with the data of users and routes, merchants can also offer location based and customized sale offers, for things and or services..

← Reply 👍

○



([https://](https://classroom.emeritus.org/courses/9054/users/236938)

Swati Sharma (<https://classroom.emeritus.org/courses/9054/users/236938>)

Apr 3, 2024

⋮

Data collection is a key process in every organization depending on the requirements. Data can come from several sources and could be disparate.

In my current organization, data was collected manually querying data from databases and then stored in Excel/Sharepoint. This manual process was very tedious and required constant maintenance. However, as part of upgrades, we build data lake that allowed us to bring data into a single location and therefore providing ease of reporting.

In my people analytics data, recruiting data was coming from Oracle Recruit, and campus recruiting was coming from a separate application called ICMIS. Data related to Talent Acquisition and demographics resided in Oracle Core and we also had data related to Exit Survey coming from Qualtrics.

All these different data points had to be transformed and we used transformation tools like Alteryx before bringing it into data visualization tools.

Data is owned by several departments in the organization and if applications are properly configured, then the data engineer are able to ingest the data into the lake and therefore giving us the opportunity to consume,

← Reply 👍



Priscilla Annor-Gyamfi (<https://classroom.emeritus.org/courses/9054/users/226376>)

Apr 8, 2024

Great submission Swati. I like the idea of creating at data lake to accommodate your data in one place which even eases data accessibility and as mentioned reporting.

← Reply 👍



Isabella Tockman (<https://classroom.emeritus.org/courses/9054/users/207395>)

Apr 6, 2024

Today, almost everything we do collects some kind of data about us, and it's not just when we shop. When we use our phones, talk to voice assistants like Siri or Alexa, or even just browse the internet, we're giving away information about what we like, what we search for, and what we do. This data doesn't just disappear; big companies like Google, Facebook, and Amazon keep it and use it. Why do they want this data? Because it helps them know us better than we might think. With this knowledge, they can show us ads or products that we're more likely to be interested in buying. In a way, they're trying to make sure that whenever we're online, we see things that might make us want to spend money. Looking back at how things used to be, it's clear a lot has changed. In the old days, when people paid with cash, the only record of what they bought might have been on a piece of paper. Then, when credit cards became popular, stores could keep better track of what was being sold and bought. Now, with online shopping, it's like these companies can see every step we take, what we look at, what we search for, and what we end up buying.

← Reply 👍 (1 like)



Gustavo Santana (<https://classroom.emeritus.org/courses/9054/users/120927>)

Apr 7, 2024

I got to the same conclusion, I'm hoping that governments start to take a look at how important privacy is to the digital world to protect us the average Joe.

← Reply 👍



Gustavo Santana (<https://classroom.emeritus.org/courses/9054/users/120927>)

Apr 7, 2024

In the last decades is frightening as consumers to see how much data they take from us, every item that you buy is linked to your social security number in Brazil, making it easy for the government or any company to know more about me than myself, identifying trends and habits that lives only in my subconscious or not even that.

We are the ones who generate all this data by using the applications that make our lives liveable, if you don't have a cellphone is difficult to get a job for example because there is no way to contact you anymore, so we are pushed to this technological environment. I find it obscene how our data today is handled without our permission our knowledge to sell us things and, in the worst scenario, deteriorate democracies.

← Reply 👍

