

BIG Data and GIS Fusion

Big Data Introduction

It is a well-known fact how big data analytics alone has forged and redefined the way analytics is done and its importance to all most all the sectors like defense, education, health care, technology, corporate, research, etc. For anyone of you reading this blog, being a technology forum, I assume, BIG Data needs no introduction but to begin with let's just say Big data as the name suggests is just massive chunk of data gathered over a long period of time and increasing in sync with data consumption and sharing happening at the current moment which is further used for analyzing patterns, behavior according to time, trends, etc. Basically analyzing this huge amount of data to gain insight and then foresee what is possible.

As I read sometime before, the rapid growth of technology has led to huge data consumption. It is assumed that from the beginning of time till 2003 that total amount of whole world's digital data was 5 billion gigabytes. This amount of data was produced in every two hours by 2010-2011 and every 10 minutes by 2013, with introduction and growth of Social Media. This is 2016 so you can do the math I wouldn't bother to try as it is not my strong forte.

Applications

This amount of data has been very essential in the field of analytics and people in various industries have adopted big data to have an insight and foresee to help their business grow. Also industries integrated social media data to the already huge chunk. Social media data was not only more accurate as it is added up directly by the individual user or as they say target, but it also proved to be not obsolete. The applications are endless in the field of healthcare, science and research, sports, law enforcement, finance, performance optimization and even politics. The Obama Administration actually used big data analytics to win the second term.

GIS Introduction and Incorporation with Big Data

It is a well-known fact how GIS has emerged in recent years and proved its mettle in today's world and analytics (read location analytics), with it being incorporated and adapted by major industry sectors and industries, its importance cannot be ignored. In my previous articles I have stressed on the applications of GIS and its fusion with various other technologies such as gaming platforms (Pokémon Go, Ingress), virtual reality and social media. With both GIS and Big Data being individual important technologies that cannot be ignored by any major sector.

Just imagine the possibilities if they are used in sync and fusion with one another. For say, in simpler words, with big data and GIS fused together we can predict the aspects of not only *what* and *when*, but also *WHERE*. In more technology forums Spatial Prediction is well talked about and is considered to prove vital to fight with the problem of data obesity. Not only can it prove to be helpful but it also paves the way for numerous other application especially when SOCIAL MEDIA also comes into picture, it's a whole new ball game altogether. This is nothing new and has already being incorporated recently. The Japanese Earthquake map being an amazing use of both the technologies. It rendered earthquake affected areas in

Japan at the time of the disaster using Twitter feed data generated by millions of tweets in Japan. It helped a great deal to identify major areas where resources were required and the quantities.

There has been no looking back and social media data has been a vital factor to enrich the maps and many open source tools being developed and shared on GitHub to encourage devs and incorporate the two. Now if talk about how app makers encourage and request users to give location access privilege to collect more data which may be minuscule but very important as it pin points almost the exact Lat/Longs. Now multiply this data with everyone using that app on all the platforms and think how much data that is and what sort of volume and variety are we talking about here in terms of data. It is huge and can be extremely useful if put to the right kind of analytics. They clearly mention that this data will be used for analytics and make the app better.

With smart-wearable, fitness bands and smart watches coming up and evolving with each generation and giants like Apple, Motorola, Google, Samsung, Huawei to name a few, investing in it. It will increase ten folds guaranteed. Analyzing your breathing patterns, heart rate, calorie intake, sleep pattern and most importantly location can multiply the amount of data (Big Data) that is also accurate and not obsolete, in its purest form.

For say someone uses Google maps every day or very frequently to navigate from place to place. This data is used to analyze traffic and optimize the route accordingly. This is done so effectively that even if most of the people are not using Google maps that very day or at that instance of time, it is still able to analyze the traffic. Ever wondered how? Big data + GIS is the answer.

Conclusion

To conclude, there are many such possibilities in various sectors. Like in healthcare with just simple Facebook status or a tweet on a person catching flu, it is possible to determine and predict where it may spread further. It's like finding the needle in the haystack is actually possible however bizarre that may sound. To conclude, it is a long way to go and the current scenario is very bright as compared to earlier, but can be a lot more productive when we talk about fusing these two technologies.

Acknowledgement

Bernard Marr -

<https://www.linkedin.com/pulse/20131113065157-64875646-the-awesome-ways-big-data-is-used-today-to-change-our-world>

Michael F. Goodchild –

<https://cybergeogeo.revues.org/27647>