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Data Analysis 101

**Data Tools**: This topic talked about the very basics of data. Things like what is data, what is a database, how to see trends in data ect. Originally for example with the video game and high score, I had no idea going in that it was that simple and had its own dedicated file. Being a gamer myself I never really thought of the behind the scenes, but I thought it was all in one ginormous code that had its own separate parts that when put together made the code for the game. However after reading it, I noticed that it actually has a decent amount of code but is broken in different parts. Such as high score, usersettings, and progression. I even went into some of my game files and looked around in a deeper look and noticed this.

**Big Data**:This topic talked about big data. This means the way we get big data, the way we look at big data, and the challenges regarding big data. As noted in this, big data is getting more and more mainstream because of the widespread population. Not only human population (even though that is a major leading factor) but also technological population and product/ company population. As noted in this topic, medical data is getting more and more digital. I never realized how much that data is quite literally an almost boundless filing folder. This includes their names, weight, age, conditions. Absolutely everything is in these files; this is not even fully strict to medical data but other things as well. Such as with companies and their data tracking or even just personal use like passwords and tax reports. The challenges are also present like the storage issues. I myself use a lot of data (I have a 5 TB HD, a 1 TB HD, and a 300 GB SSD) so I cannot even possibly imagine how much data travels every day or even how much there is in the world at this moment.

**Machine Learning**: I cannot tell you how much reading the first part made me laugh. When I saw that machine learning and more so specifically “reinforcement learning” was basically positive reinforcement for a robot, that just made me laugh. Other than that I can understand machine learning slightly. As noted in this, one example could be a car has wheels but if it has 2 wheels then it is not a car however, if it has more than 4 wheels it is also not a car. Stuff like that being mass produced in giant algorithms makes sense of how machines could learn. Even percentages like the example of the fox. The chances of this image being a cat is .25 while the chances of a dog are .65 and a fox is .85 so the image most likely is a fox. The bias in predictive algorithms I did not really think about in machines. Human error WILL affect machines and we have to teach it entirely separately that it is not the correct way to do things.

**Unit Test**: The test was a lot shorter than I thought and I did appreciate it. When most tests talked about this and that, this test was very practical by giving real world examples and situations while asking your experience with computer science to apply those concepts to real world applications. The test briefly went over the rest of the readings and was a good wrap up for this short unit.