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Book Summary #1

For this summary, I read from the book Nine Algorithms that Changed the Future, starting on page one, ending on page fifty-nine which covers chapters one, two, three, and four. Through the first four chapters of this book, three things caught my attention. The first was the importance of search engines, followed by PageRanks and lastly having the ability to share secrets. My basic understanding of computers and their operation progress has improved since I began reading this book. I now see the correlation between the things I have read about and how they relate in my life, through the usage of computers.

Algorithms play an essential role in the process of making a computer operate. Anyone who has used a computer uses algorithms whether they know it or not. In computers, programs have been installed to improve efficiency for the user. Computer science is credit for making this advancement. The most common algorithm happens through search engines, in a process called matching and ranking. These two steps help separate, sort, and organize a searched item so the user can find accurate and reliable sources. I found this quite impressive considering the world wide web has endless pages of information and yet, the search engine figures out the best results and lists them accordingly. All of this matching and ranking happens almost instantaneously. Having an algorithm that ranks data efficiently and affective allows companies with productive search engines standout.

Another key point that comes off of the search engine is the PageRank. A PageRank is self-explanatory, it ranks pages based on the importance of a website's pages based on matching and ranking. How this is calculated is by the number of hyperlinks that correspond to the PageRank. A hyperlink allows a user to access a website simply by clicking on a word or phrase often highlighted in blue, once it’s clicked on, it will open up a new webpage link. The use of a hyperlink is an older technological advancement that is still prevalent to this day. The use of hyperlinks isn’t the only helpful tool to improve PageRank. Another useful strategy involves finding websites with strong authority. The only problem is computers struggle with determining reliable links. Computers do a wonderful job of finding strong websites for information but it comes down to the user to determine if the site is reliable.

The last thing that stuck out to me is the idea called a shared secret. This idea allows for computers to communicate information with one another, not worrying about outside sources depicting the meaning of the message. Computers do a great job of sorting and organizing information. The downside of using the internet is everything that is searched or typed stays on the internet forever. With the help of cryptography, secret codes can be translated between multiple sources safely. To secure the message security measures are put in place. Different schemes have been created to limit the chances of losing important data. Depending on the length of a message will determine how the code is hidden. If it's a larger message, it will be broken up into smaller characters referred to as boxes or by adding complicated rules to disguise the code like adding and subtracting numbers. These implemented ideas help protect shared secret messages. If these regulations weren’t in place, the information could easily be manipulated by external groups or individuals. Nowadays, cryptography plays a major role in protecting personal information including passwords, credit card numbers, and highly-classified information. The shared secret is also important for business, scientific research, and any other job that requires the use of technology.

From the chapters I have read, my understanding of algorithms has grown. I knew how to use a search engine before, but I had no idea the complicated algorithm process of ranking and matching to sort the best results. The same can be said about PageRanks and the use of hyperlinks to compel results. I am also grateful for the algorithms that allow for shared secrets to be public knowledge but only decoded by the proper receiver. I use all three of these algorithms in my everyday life, and now I have a better understanding of their purposes.