Week Twelve Reading Notes

This week continues with statistics addressing some fundamental issues with their use. You may be wondering, “Why does a course on computer programming and computer science spend so much time on statistics?”

There are many answers to this question. An introductory class on a subject that has very wide applicability has a challenge as to how to demonstrate this applicability without spending a huge amount of time on any one topic. The goal is to choose many problems that are fairly easy to state, do not require much background knowledge, are interesting, and may be widely applicable. We could have spent the whole semester on programming a video game or building a Facebook-like web site, but nothing else, because those tasks are incredibly complicated. However they are also very specific.

On the other hand, statistics, randomness, and probability form a basis for many different types of computer programs and solutions. Video games make extensive use of randomness (otherwise, it would be too easy to defeat the dragons). Facebook makes extensive use of statistics (for example, in generating those personal ads, or performing Graph Search - https://www.facebook.com/about/graphsearch - now don’t graphs seem more interesting?!).

People tend to believe answers that are produced by computers, so it is important to understand how computers produce those solutions. Computers are only a tool. Programming is a way of using this tool. It is up to us, however, to use the tool in the right way.

Today, there is lots of excitement about Big Data. Data is being collected all the time and it seems like it is being collected at a faster pace every day. Computers will play a crucial role in finding valuable information in these large collections of bits of information.

Some things to watch out for in the lectures this week can be entertaining. Personally, I have multiple different email accounts, use computers at home, in my office, in coffee shops, and it may appear as if I am several different people from the internet's perspective. Think about this when you hear the fact that 120 percent of the population uses the internet. Also, it is interesting to fact check the claim in the lecture about the number of people who die from the flu each year. In a funny way, this supports the point being demonstrated, but you will have to follow the lecture to understand that point.

-Larry Rudolph