Diane Harrell

IST 300

Dr. Frazier

April 1, 2024

Information Behavior in Computer Scientists

Computer Scientists take in many different sources of information all of the time. Be it from the code they are working on, to the search engines they are using. What makes them unique is their technical expertise, along with their adaptability to rapid technological changes.

Computer Scientists need to be able to very quickly adapt to the changing environment of the technological world. Since they are the main designers and front line of the changes, they must have a deep understanding of the information that is processed, comes out of, and is a result of their field. Many coding assignments also include the use of group collaboration, which means each individual group member must fully understand the information being created, and be able to contribute to it effectively. Without understanding the information they are creating, the assignment will ultimately fail.

Within this field it is also extremely important to keep up to date with changing information. If someone is ill informed on changed information, they could create an unworking code, or simply just misinform someone else of something they believed to be true. The study conducted by Kumaripaba Athukorala “revealed significant positive correla-tion between academic level and how often they search for new developments, r_T (N = 76) = .34, p < .01”

I have chosen my roommate, Juliet, to interview to find out if what I have learned is consistent with what I have read and what additional challenges they may face. We have known each other for roughly two years, but I am not a part of her user group so I felt she was a good fit for the task. Our interview lasted roughly an hour, and we discussed all of the questions in detail. I have listed out the 8 questions I asked, and how they responded, followed by extra detail correlating to my research.

1. How do you stay up to date with the latest advancements and trends in computer science?

"There is this really cool newsletter that I sometimes look into called "TDLR" which essentially aggregates a bunch of technical news articles together into a summarized form, providing me with bite size information. There are usually articles linked with summaries of each article, varying between big tech companies, general scientific advancements, discussions about designing certain codes, etc. I also talk to other people within the field - both actively working and students - to try and gain as much information as I can about information in the world. Sometimes youtube, but I usually fact check those to ensure they were correct."

Working with other students in the field is an excellent way to ensure that information is accurately being understood. Keeping up to date with new technological changes also has its benefits, as you will always be up to date with new changes and be able to adapt accordingly. As far as my research goes, I believe these two approaches to be the most beneficial ways for computer scientists to understand and use new information.

2. Could you share a time when you found a problem particularly challenging, be it in school or in your work life, and how you went about finding a solution?

“I feel this question is kind of vague so I'm going to answer with whatever comes to mind first.. I really struggled with a class early on in computer science that really kicked my ass. So what I ended up doing - I've never been much of a studier - but this time I went out to the library and found some dusty library books and I actually took advantage of my resources and went to the tutoring center, so that definitely helped. I guess the way I solved this challenge was - instead of suffering in silence - I took it upon myself to do whatever I could reach and I mean I passed the class so.. I guess that problem was solved. I've taken it upon myself to bring that with me into my higher level courses and it’s helped to prevent similar challenges. To prevent future problems like this I started something called a synthesis - since all the classes build off each other - and it's essentially a “how to do something for dummies” book written by myself about previous material.”

Within my studies it has shown that while physical media is still very reliable, most individuals tend to use a virtual search engine and the need for physical media has died out. Juliet saying that she prefers to use physical media in most scenarios is a sign that research cannot account for everyone - just the majority. While physical media may be a semi-outdated form of study, it has proved beneficial in this case.

3. How do you determine if the source you are using is credible, and what steps do you take to ensure that they are?

“In general I tend to stick to books or if I have to use a website I like to take a peek at the references and trail them back to where they come from. Unless a professor is recommending it, then I usually take their word on the credibility.”

It has been shown that most computer scientists will trace back their sources to ensure they are getting accurate information and are able to complete their assignments or tasks correctly. It is very in line with everything I have learned to research links, or trust a fellow computer scientist - especially one with more experience than you - to know if a website or book is credible or not.

4. What resources do you typically use when doing research for a coding task?

“Definitely the documentation for whatever language I am using, as I find the syntax difficult to memorize. I also refer back to my professors, my synthesis - if relevant - or stackoverflow since chances are someone has attempted the same thing I am doing before me, at my level.”

Looking for resources to help work your way through issues you are having while creating code is exceptionally common within the computer science user group. Coding is difficult, in the sense that you can get many different coding errors and most of the time they are very vague with no explanation as to why your code is not working. Using something like stackoverflow - or in rare cases even resorting to sites like reddit - have been known and have proven to help solve any issue one might encounter.

5. Can you share a time in which you had to sort through a lot of data to ensure relevancy, and how you went about that?

“I will search in google - say the data is for coding research or something - I would look up something that would bring up relevant data, and open anything on the first page that may *seem* like a credible source - like if its a name I am familiar with or something that looks very detailed - I will ctrl+f it to try and see if there are any hits for exactly what i'm researching. If not I will move on to the next source. After moving onto the next source I will of course check the validity of the article before using it for my work.”

I think that using ctrl+f to look through an article quickly is a shortcut that many computer scientists use. I have heard from many people that they use this approach, and find it helpful. I did not, however, read about it within my research but I assume that it is a broadly used but un-notable “hack”.

6. How do you ensure proper information retrieval within a group project to ensure everyone is receiving the same information?

“Whenever I am in a group project with someone, I typically like to do group chats and also have some sort of document that we all have access to. Whenever I use a source for something I will paste the link in the document, along with whatever quote it was that I had used from the article so that everyone has access to the same things I have access to.”

Group work is exceptionally common in the computer science field and they all heavily rely on one another to get their job done correctly. While it is important to have and understand information yourself, making it easy to understand the information you

are providing your group with is very important to ensure the full understanding of everyone in the group.

7. Are there any specific tools or technologies you rely on to help streamline information retrieval?

“I tend to use google and the library the most, relying on the physical media more than the digital media since most physical media is credible in one way or another.”

Google is one of the most commonly used research methods that I have found computer scientists to use. The existence of google scholar and googles filter option helps computer scientists get to the information they need easily and efficiently.

8. Can you discuss any strategies you use to cope with information overload, and how you focus on your objectives?

“Information overload happens a lot to me - especially when I get a new protection - since it usually has a million other parts that get separated into a bunch of other tiny parts, and can be a lot to look at. So what I personally like to do is get comfortable with a energy drink or two and then once the caffeine kicks in I like to make a detailed outline of what each individual part will be compiled of, kind of in the form of a checklist, and make diagrams if needed. Each checklist tends to be very thorough, in the sense that I am adding anything that I think may be helpful to each listed out component and go from there.

The creation of checklists is something I came across semi-frequently in my research and I believe that it is truly up to personal preference. Documenting your steps and laying it out helps to keep information sorted, but it could also cause information overload as you look at all of the pages at the same time. It would be important for

computer scientists to remember to keep it one step at a time as they are completing their work.

During my research and interview, I found that while everyone processes the information they learn differently, it is generally understood that computer scientists handle their information very well. I found that information amongst computer scientists is constantly changing, but they have a grasp on it. They are very good at maintaining information and ensuring that their fellow computer scientists are learning and changing as well. They are very group oriented in their work. Computer scientists constantly reach out to one another for questions, to get help with a code, or to collaborate on an assignment.

While it can be assumed that research can show you everything, sitting down and interviewing Juliet has proven otherwise. While doing my research I assumed that individuals now preferred digital media over physical media, which was wrong. I think that the best way we can help from outside of the computer science user group is to listen to their needs. Research alone cannot provide you with the individual needs of computer scientists, nor can it fully help you understand their user group. The best way to learn is to be hands-on and proactive, listening to what they have to say about their work and learning and adapting as you do.

Computer Science as a whole is very research oriented. Everything that they do is usually fact checked multiple times, analyzed for any errors that may have occurred, and is typically shared with other people to get more than one opinion. It is very important for computer scientists to understand how their information works, how to better understand it, and how to fix it when it is scrambled up.

Works Cited

Olander, B. (n.d.). Information interaction among computer scientists. A longitudinal study. https://informationr.net/ir/12-4/colis14.html

Olander, B. (n.d.). "*Scholarly communication in transition. Computer scientists' information behaviour over twenty years."* NCLive. https://eds.p.ebscohost.com/eds/detail/detail?vid=0&sid=1bed76a9-0f46-4938-8366-be9273996e0f%40redis&bdata=JnNpdGU9ZWRzLWxpdmU%3d#AN=36027241&db=lih

Athukorala, K. (2014, May 8). "*Information-Seeking Behaviors of Computer Scientists: Challenges for Electronic Literature Search Tools".* asis&t. https://asistdl.onlinelibrary.wiley.com/doi/epdf/10.1002/meet.14505001041