Interview with Dr.Sukumaran Nair

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Interviewee: Dr. Sukumaran Nair - University Distinguished Chair and Professor of Computer Science and Engineering at Southern Methodist University

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Summary:

I had the pleasure of conducting a research interviewing with the University Distinguished Chair and Professor of Computer Science and Engineering at Southern Methodist University, Dr. Sukumaran Nair, where we discussed Software Defined Networks (SDN), Cloud Computing, Inversion Systems, Data Analytics, and the pros and cons of some innovations in technology. A few of the innovations and changes we discussed included: the ease of accessibility of information, but how that is affecting our privacy; the increased speed of networks allowing more dependency on cloud computing and storage; the increasing availability of regular devices to connect to one central wireless network with IoTs, but the need for more security in those wireless networks. We also discussed importance of good ethics when in a team.

Interview:

We began by talking about Dr.Nair's background and his experience in the telecommunications industry. Dr.Nair specializes in Cyber Security, Cloud Computing, Network reliability, Fault-tolerant computing, and Reliable human computer interfaces. Dr.Nair discussed his time as a consultant and the work he did. Dr.Nair also emphasized the importance and impact word-of-mouth can have when looking for new clients or jobs. After talking about his background and experience we started talking about technology.

We talked about the impact technology has on our lives. He explained humanity's increased dependency on technology and how technology is finding a place in everything we do. We furthered discussed this topic by discussing the pros and cons of some innovations. Dr.Nair discussed the increase of universal connectivity and even though it allows convenient access to documents and files regardless of where you are, it can threaten our privacy. He used the

example of how he can share a file that is on his Mac at home from his phone, but, that opens up the risk that if anyone can get access (local or remote) to his phone they will also have access to his Mac.

We also discussed the growing field of IoTs and their potential impact the way we live. As well as talking about how many of their systems are currently secure but could easily be broken due to the lack of refined encryption and security in IoTs. Dr.Nair discussed the monumental amount of personal information IoTs will gather, and their potential to be extremely valuable and become targets of hackers with various intentions. He explained how this is resulting in the growing need for a more secure way to transfer data and growth in the field of Cyber Security.

Another advantage of modern technology we discussed was data analysis, modern computers and data collections tools collect mass amounts of data allowing us to make more educated decisions. Dr.Nair also discussed the negative aspect of that by people becoming dependent on the data analysis software and how that could have adverse effects. Dr.Nair explained with the example of airplanes and how their fuel efficiency is so thoroughly analyzed that most flights don't fill their tanks to the max but to the bare minimum they need in order maximize efficiency. But, what if the airplane has to deal with unexpected turbulence and uses more fuel than expected, the place is forced to land and refuel creating an inconvenience to the customers and costing the airlines more than if they had just filled the tank up. The power of data analysis is extremely powerful however 100% dependency on the analysis can cause issues.

When we started getting deeper into networks, Dr.Nair introduced to me the concept of Software Defined Networks (SDN's). A Software Defined Network is a method of network administration to manage the network through software abstraction in the lower levels. Dr.Nair explained to me how Software Defined Networks are addressing the lack of flexibility offered by the static architecture of traditional networks and adds a dynamic approach to networking. The dynamic approach facilitates an environment that supports scalable computing and storage needs. Dr.Nair also discussed the advantages of a Software Defined Network including its ability to be quickly customized with software since they can be directly programmed, as well as

Software Defined Networks' agility due to the abstract level of control. The biggest advantage of Software Defined Networks are their functionality as dynamic network structures.

I was curious about what Dr.Nair preferred to use: Mac or Windows. Dr.Nair explained how he liked the Apple ecosystem and how he enjoyed being able to connect everything together from his iPhone to his Apple Watch to his iMac. We related this back to how the easy access of information leads to the issue of privacy but, he explained that by keeping all of his files encrypted he reduces the risk of losing private information. After discussing numerous technology topics, I wanted to learn more about what Dr.Nair finds important when working with other people in a team. Dr.Nair explained that he valued good ethics in team and how when you're in a team you're dependent on each other and that you need to be able to trust each other. Overall this interview gave a great insight on the growing field of cyber security, gave me useful advice when choosing team members, taught me about Software Defined Networks, and more.