

Dr. Bhavani Thuraisingham's Answers to the D CEO (part of D Magazine) Dallas 500 Questions – Named one of the 500 most Influential Business Leaders in North Texas in 2021

- **Name, Title, and Company (as you'd like it to appear in the publication):**

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- **What educational degrees do you hold, and where were they earned?**

I was educated mostly in the United Kingdom. I received my Masters at the University of Bristol in Mathematical Logic and my PhD from the University of Wales in the UK in Theory of Computation. Subsequently, I received the highly prestigious earned higher doctorate (only awarded in the UK and the Commonwealth) Doctor of Engineering at the University of Bristol, UK for my published research in Secure Data Management.

- **Where were you born?**

I was born in Colombo, Sri-Lanka (South Asia) and am of Tamil origin. I would also like to add that I finished my undergraduate degree at the University of Ceylon (name for Sri-Lanka at that time) in Mathematics and Physics in 1975 when I was 20, married my husband (arranged marriage) soon after while he was finishing his PhD at the University of Cambridge, England, and then moved to England to start my graduate education at the University of Bristol.

1. **What was your first job, and what did you learn from it?**

Soon after my PhD we moved to the US in 1980 Summer when I was 25 and I was offered a tenure track assistant professor of Computer Science position at the New Mexico Institute of Technology in Socorro. Because my son was a baby at that time, I thought hard and did not accept the position, Instead I took a visiting faculty position instead. Looking back that was a very good decision as I was not stressed in my job and I was able to work at my own pace and still be a mother to my son. Surprisingly I was extremely productive at work. I learned how to write proposals and research papers as well as prepare lectures both at the graduate and undergraduate levels. My papers were also accepted (and subsequently published) in top tier journals. Now, 40 years later it is still helping me to do my best after a career in the commercial industry, federal research lab, US government and now academia.

2. **Who has been the greatest inspiration in your life?**

At a professional level I would say Prof. Marion Pour-El at the University of Minnesota. We moved to Minneapolis after New Mexico, and I continued to work as a visiting faculty two more years at the University of Minnesota before joining the commercial industry in 1983. I worked with Marion and she is the person who stressed that I can be a mother and a career woman and for that I need to build a strong support system. This is what she did. I still follow her advice and give the same advice to my son as he is now a father. On a personal level my mother has been my greatest inspiration. She always encouraged and motivated me regardless of whether I was first in class or tenth in class.

3. What piece of advice has had the most significant impact on your career?

Other than Marion's advice, I would say my mentor Henry Bayard at the MITRE Corporation always said "You can do it" when I was not sure whether to take on challenges. That was in the early 1990s when I was in my 30s. I have followed his advice and have taken on challenges since then and my career has gone from strength to strength. I have built a network of women professionals and we support each other in our careers. I am also a strong mentor to junior researchers. I would also like to add that my mother advised me not to worry about matters outside of my control and to take advantage of all the career opportunities in front of me.

4. If you could have dinner with any two DFW business leaders, who would you choose and why?

I would choose the Chief Technology Officers of Texas Instruments and AT&T (at present they are Ahmad Bahai and Andre Fuetsch). They are both DFW-based companies. One is a semiconductor company and the other is a telecom company. My interest is in software. I would like to find out what are the software challenges they have? How are they handling cyber security threats? How are they using AI in their products? Finally I would like to find out how they developed their careers. Then with their approval would like to share their experiences with my students. Our students are the future of technology and they have to be inspired and motivated.

5. What are some of your favorite destinations/places to visit?

I have done extensive travel starting around 1995 until early 2020 (before the COVID-19 crisis) to give keynote addresses and other talks at major conferences around the world. Every place is special. But two cities that I really enjoyed visiting are Auckland, New Zealand and Nice, France. It's hard to explain why – maybe it's because the cities were surrounded by water and had a calming effect on me. But if you ask me the most special destination I would have to say Cape Town, South Africa in December 1999 to attend the conference. I was so inspired visiting Robben Island seeing Nelson Mandela's prison cell. That's when I felt very strongly that I have to do more for women and under-represented groups in Computer Science.

6. Is there a nonprofit cause that has special meaning to you? Please tell us about it.

I have supported organizations such as Save the Children and UNICEF over the years to improve the lives of children around the world. I believe it is critical that children are safe and have clean water, food and a roof over their heads because they are our future. More recently, I am very passionate about the United Nations' Initiative on "AI for Good". There are so many benefits due to AI, including applying them for many applications including detecting the spread of COVID-19. However, AI comes with challenges such as bias. In addition, they can also result in privacy violations as now you can combine several records and identify the individuals. In addition the AI techniques can be attacked. Therefore, I am very interested in following what the United Nations is doing in this area and also giving talks on topics such as "Can AI be for Good in the Midst of Cyber Attacks and Privacy Violations?" and I focus on violence against children as an application area.

7. What's your hobby/passion?

I have many hobbies. I took 10 years of classical piano lessons and took exams from the Trinity College and Royal Academy of Music in London. Examiners from London used to visit the Commonwealth countries to conduct exams. I still enjoy playing the piano, but unfortunately I do not have a piano at home as we live in a small two BR/two BA condo, but I listen to music on YouTube. I also enjoy watching professional Tennis on TV especially the Grand Slams and almost all other events. Fortunately I do not subscribe to the Tennis channel; otherwise I will not get any

work done. I also meditate almost every day since 1991 as I need it to handle stress and over the years I have begun to really enjoy it.

8. What is one of your favorite things (special golf club, gift, piece of art, etc.)?

It is a tiny pink cushion given to me by my son for Mother's Day in 1988. It says Happy Mother's Day. I still have it next to my pillow and look at it every night and think about the wonderful times we have had and still have together. I am very grateful for such pleasures in life.

9. What would you request as your last meal?

While I would like to say a vegetarian meal with fruit as that would be most healthy, since this would be my last meal, I would say a nice lamb stew with eggplant and lots of spices followed by vanilla ice cream and a hot cup of strong English Breakfast Tea with half and half cream.

10. What would people be surprised to learn about you (fun fact)?

That I really like watching basketball. I got passionate watching this game with my son when he was growing up in Boston. I was a fan of the Chicago Bulls at that time. Now of course I am a Mavericks fan. I still do not miss any of the playoffs, the conference finals and the championship game on TV.

11. What is your dream car?

I have always driven less expensive cars like the Chevy Impala and Kia as I don't like spending money on cars as long as it takes me from A to B safely. But my dream car would be James Bond's Aston Martin. I have watched all the Bond movies since I was around 10 and fell in love with the car. The past several years I travelled to England quite often as I have a Senior Research Fellow position at Kings College, University of London. I go shopping at Selfridges (mostly window shopping) while in London. On the way I pass a luxury car dealership with very expensive cars including Aston Martins displayed in the showcase. Just looking at them is a treat for me. But I cannot afford such a car and even if I could in the future I don't think I would buy one.

12. What's the toughest business challenge you've had to overcome?

I have had a great career at Honeywell, MITRE Corp., National Science Foundation and now UT Dallas. The toughest challenge throughout my career is writing good proposals, because we need to get funds for our research. It was challenging in the beginning but I persisted by writing many proposals and getting many rejections in the beginning. I did not give up. The more I tried the better I got. I believe now I am quite good at it. Another challenge was getting into management and leadership positions. I was given the responsibility of being a department head at MITRE. I was extremely reluctant in the beginning and my mentor said you can do it. So I took on the challenge and became good at it. It has made me into an effective leader.

13. What is an office/home accessory or tool you can't live without?

It has been my desktop, laptop and iPhone for the past several years. But now that we are working from home I would also add a powerful camera and microphone for taping my video keynote addresses and lectures on Zoom as well as WebEx, Teams, etc.

14. What has been your/your company's most significant success over the last 12 months?

I head the Cyber Security Institute and also work a lot in AI and Data Science. The most significant success for our Institute is the members, especially the junior faculty, getting prestigious awards

and thriving in their careers. Another success is our students getting top jobs in companies such as Facebook, Amazon, Google, Apple, Microsoft and IBM, among others. We have also been successful in recruiting female students into our cyber security program due to the teamwork of all the members. We worked on some challenging research problems such as applying Artificial Intelligence for Malware Analysis and handling cyber-attacks on the Artificial Intelligence systems. We have made quite a name for ourselves in this area over the past year. We also transfer the technology to commercial products by having start-ups as, obtaining patents, as well as working with companies. For me personally getting the top honor for a Computer Scientist which is Fellow of the ACM (Association for Computing Machinery) in December 2018 and officially receiving the award in June 2019 in San Francisco has been the highlight of my career.

15. What is one thing you would change about Dallas to make it even better?

When I first moved to Dallas in October 2004 from Boston after I completed my three year assignment in Washington, everything was so different here. My husband was in Boston at that time and I told him I don't want to live here. He said try it for a year. So one year became five years and then ten and now almost 16. I love Dallas, especially the climate. I also like the people as they are very friendly and welcoming. One thing I would like to have in Dallas is a start-up culture like the one they have in Silicon Valley or even Boston or New York. We have many large technology companies in Dallas and strong universities especially in Computer Science. It would be really great if we can get our technologies transferred to commercial products.

16. What has 2020 taught you?

I have not experienced a year like 2020 before. It started off so well with so many meetings in Washington DC, London, San Francisco and New York City. Then came COVID-19 and working from home. It made me realize that nothing is more important than health and being with family. Fortunately my husband who is based in Boston and also spends lots of time in Dallas was in Dallas late February. So he has been with me the past six months. But we miss our son and his family in New York City. What 2020 has taught me is never take things for granted and appreciate every little thing you have. I have also learned not to worry about the future and to enjoy the present with respect to both my personal life and work. As a result I have been extremely productive and looking forward to the future.

17. What is your all-time favorite movie?

I love the epic movies we used to have and there are quite a few like *The Ten Commandments*, *Ben Hur*, *Gone with the Wind* and *Dr. Zhivago*. But my favorite has always been *The Alamo*, even before I moved to TX - It's the John Wayne and Laurence Harvey version of the movie. I like it as it depicts what happened in history and how brave the men were.

18. What is one book you think everyone should read (or podcast everyone should listen to) and why?

I read a lot of technical books in Data Science and Cyber Security. The one that is a must I believe is "*Machine Learning Yearning*" by Andrew Ng. Dr. Ng was a professor at Stanford and the founder of Coursera. I like this book because it is technical and yet explained so well that most readers could grasp the concepts of machine learning and its impact. With respect to non-technical books, I would say *Pride and Prejudice* by Jane Austen. I also like to read motivational books like *Willpower* by Baumeister and Tierney.

19. Name one item on your bucket list.

I have many. But the most important one is finishing my book on Secure Data Science. I have written 15 technical books since 1997 and while it was hard work, it was also fairly effortless. But my book #16 has been a struggle. Maybe because we are all working from home and I have been very busy taking on many virtual keynote addresses. I have finished six of those so far and have four more to go between March and December 2020. On a personal note I am yearning to have Scones with Clotted Cream and Strawberry Jam. I have not travelled since March and whenever I used to travel to England I would arrange my schedule so that I have a proper English tea every day.

20. What have you most excited about the future?

I am most excited about technology especially the developments in Artificial Intelligence and Data Science. This is really changing the world. Imagine if we did not have technology what could have happened with COVID-19? Still, there is so much more work to do such as developing technologies and applying them to find effective vaccines. Also, as we develop more technologies there are many more cyber security challenges. So, I am not only passionate about developing new technologies with AI and Data Science, but also very focused on addressing the cyber security challenges that result due to the technological advances. I have had a very rewarding 40 year career and health permitting would like to work 20 more years as there is so much to be done to develop novel technologies. But like I did 40 years ago, I still try to find a balance between my work and being a mother and more recently a grandmother.

• Here is a question I added – What was the lucky break in your career? (if you think it would be interesting to include it)

After three years as visiting faculty at New Mexico Tech and the University of Minnesota, I started working at Control Data Corporation in 1983 as a senior software developer in Computer Networks. I enjoyed development a lot and was an integral part of the team that developed CDCNET which was one of the early computer networks. After contributing to the first release of the product, I wanted to get into research. But it was no easy as I was limited to the Minneapolis/St. Paul area. Then I got a lucky break. I became a US citizen in Fall 1985, Honeywell had won a contract from the US Air Force to design and develop a highly secure database system, and Honeywell interviewed me and made me an offer. All three events had to occur for me to start my career in Cyber Security and Data Science (what used to be called Computer Security and Data Management in 1985). Since then I have been very fortunate to have a very rewarding career.