

Podcast Name: *ACM ByteCast*

Episode: Anima Anandkumar - Episode 42

Welcome to the *ACM ByteCast* podcast, a series from the Association for Computing Machinery! The podcast features conversations with researchers, practitioners, and innovators at the intersection of computing research and practice about their experiences, lessons learned, and visions for the future of computing. In this episode, host Rashmi Mohan interviews Anima Anandkumar, a Bren Professor of Computing at Caltech and the Senior Director of AI Research at NVIDIA.

To begin, Anima introduces herself and discusses her career journey. She starts off by saying we need to reimagine how we bring AI, which intersects with all these different things like science, math and engineering. It was a privilege to be in a household where computer science was a part of daily life. Her mother went on a hunger strike for 3 days to get into engineering – her mother is her role model and showed that women could be really good with technology. Her parents have a company with manufactured automotive components and they created computerized machines. This sparked her interest in that programming can be very tangible and physical. Next, she talks about her education. She attended the Indian Institute of Technology in Madras and it required an IT entrance exam where they only accepted the top 100 students. This forced her to understand concepts deeply. She states that technology is always changing, just like our world. Education and technology is constantly evolving and we should be adapting just as quickly. She credits her advisor to her early career breakthroughs and her natural curiosity helped her to make sense of programs and designs.

In addition, Anima discusses topic modeling and gives an example. She says if you saw all of the words in a tweet and you see the word “apple,” you wouldn’t know if it is the fruit or the name of the company. If the words were “apple and orange,” it’s still not clear because “orange” is also the name of a company. But, if you have all the words “apple, orange, banana,” then now you are more certain that the topic talked about is a fruit. She also talks about reinforcement learning with the video of the robot with backflips. Now, AI includes visual motor learning where you can ask it for text and image commands. For example, you can rearrange the chest pieces in a certain pattern, it can do that and give multi-model prompts. AI is able to generalize a variety of different tasks with zero shot manners, or good performance without explicit examples. In closing, Anima discusses how the pandemic showed how people can still be productive remotely, and the importance of interdisciplinary collaboration.

Key Takeaways:

0:27 - Introducing today’s guest Anima Anandkumar.

1:55 - Anima introduces herself and talks about her career journey.

7:07 - Anima discusses how her childhood impacted her education.

10:02 - Using skills learned to solve world problems.

12:30 - Breakthrough moments in her career.

21:11 - Example of topic modeling.

23:17 - Reinforcement learning.

26:03 - What drives your interests?

32:44 - Interdisciplinary collaboration.

Links

Learn more about [Anima Anandkumar](#).

Learn more about [AMIA](#).

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Tags

AI, programming, computerized, IT, technology, machines, innovator, women, zero shot manner, topic modeling, products, Caltech, interdisciplinary collaboration, NVIDIA, AI research, Bren professor, reinforcement learning