

Podcast Name: *ACM ByteCast*

Episode: Shyam Gollakota

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 guest Shyam Gollakota. Shyam leads the Network of Mobile Systems Lab at the University of Washington's Paul G. Allen School of Computer Science and Education. He is the Co Founder of multiple startups in the field of life sciences and mobile computing. He was featured in the *Forbes 30 Under 30 All Star Alumni* for making waves in the world of energy and the MIT Tech Review's *35 Innovators Under 35*. He was also named the recipient of the 2020 ACM Grace Murray Hopper Award.

The conversation begins with a look at Shyam's background and current work. He shares about the access to information people all across the world now have thanks to the internet and how the application to computer science has become a basic worldwide language. What's most exciting about the field of computer science now, he believes, is that it is working to address some of the world's most pressing problems. One of Shyam's most prolific contributions is his work around the ambient backscatter, which uses existing radio frequency signals to power devices. Listen as he breaks down the challenges of the backscatter, the shifting perception of the connection method and the experiments conducted to determine its efficacy.

Then, Shyam discusses his work around wind dispersal powered devices. Hear how the dandelion provided inspiration around this research. Over the next decade, he expects that biology will have an impactful role to play in technological breakthroughs. Similarly, there will likely be an uptick in biodegradable computing platforms. In addition, Shyam is passionate about healthcare and the role technology can play in the space. His interest in the field began with his work on devices used for sleep apnea and tracking.

Shyam offers insights around data privacy in the healthcare world and beyond. One of his largest drivers for innovation in this area is to be able to democratize medical attention to areas who don't have the same resources as the western world. He shares that the future of mobile health will be centered around diagnosis. As the conversation wraps up, Shyam gives insight into the many accomplishments of his entrepreneurial journey thus far. Finally, he looks towards the future to identify the technology area he is most excited about.

Key Takeaways:

0:29 - Introduction to this episode and current work.

7:10 - Discussing the ambient backscatter.

13:48 - Shyam's work around wind dispersal powered devices.

18:28 - How the data collected by devices is analyzed.

24:13 - Shyam's work in the healthcare space.

31:48 - Data privacy in healthcare and beyond.

36:02 - Shaym's entrepreneurial journey.

40:23 - Looking towards the future of healthcare tech.

Links:

Learn more about [Shyam Gollakota](#).

Learn more about the Association for Computing Machinery (ACM) at acm.org.

Learn more about the ACM ByteCast podcast at acm.org/bytecast.

Tags:

ACM bytecast, computing, computer science, computer engineering, connected devices, internet, ambient backscatter, wifi, startup, technology, energy efficiency, natural word, science, biotech, biodegradable computing platforms, healthcare, medical tools, sleep apnea, smartphones, data privacy, western world, medical data, mobile health, wellness, medical diagnosis, entrepreneur, innovation, healthcare tech