

Podcast Name: *ACM ByteCast*

Episode: Team V Bionic - Episode 34

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 guests Ramin Udash, Zain Samdani, Asfia Zubaira and Faria Zubair. This young team of 4 individuals make up Team V Bionic, the most recent champions of the Microsoft Imagine Cup.

Kicking off today's conversation, each guest introduces themselves and shares their own stories of what drew them to the field of computing and robotics. Over the course of his life, Zain shares, he has set out to make robots which make the tasks required by daily life easier to complete. He was primarily involved in the development of affordable prosthetics before creating ExoHeal. He decided to conduct all of his research into the field of prosthetic open source to help paralyzed people like his uncle recover faster and have access to the prosthetics they need. Exoheal, Ramin explains, is a company aiming to heal hand paralysis with the help of their manufactured exoskeleton. A patient holds the exoskeleton in their paralyzed hand, which then performs specific exercises to stimulate recovery from hand paralysis. Through the use of a sensory glove, they are able to measure how much a patient recovers over time. They built a mobile application that connects to the exoskeleton, which makes the product much easier for users to operate.

Faria and Zain were attending the same school when Faria realized the initial prototypes of ExoHeal were quite robotic in nature. With her expertise in both STEM and fashion design, Faria was able to transform the latest prototype design to make it less protruding and fit into all hand sizes. The Imagine Cup, she explains, provided young people with a unique opportunity to challenge themselves to bring their visions to life. The team saw the opportunity as one step closer to helping their patients get back to living their normal lives. Next, Asfia explains that ExoHeal is not just a device, but a complete therapy with a total rehabilitation routine. She believes that anyone can recover as long as they have hope, a belief which she works to instill in patients.

Most pre-existing medical technologies used bulky and expensive technology, which makes them more expensive. ExoHeal has done the opposite, making their devices more affordable and much more portable. The products are fueled by power banks, and as the company grows, they look forward to finding out how to make better uses of other power sources. Before the conversation draws to a close, our guest offers a look into what the future holds for ExoHeal. Now, they are working to combine their AI model within the robotic device and testing it with a larger group of patients in their next round of clinical trial to figure out how improvements can be made based on the newfound patient data. They are currently scheduled for launch in the third quarter of 2024. Up until then, the team will be working hard to perfect their prototypes and making sure the product is ready for manufacturing. Finally, hear about the highs and lows of creating and launching this product.

#### Key Takeaways:

- 0:29 - Introduction to today's episode and guests.
- 1:33 - Guests introduce themselves and share how they came to robotics.
- 6:34 - Zain Samdani's early robotics ambitions.
- 9:15 - How does ExoHeal work?
- 12:40 - The biggest challenges when building ExoHeal.
- 15:04 - How Faria incorporated her fashion design expertise into the project.
- 18:37 - Asfia's belief that with hope, all can be healed.
- 21:13 - How the costs of ExoHeal are able to be kept down.
- 26:02 - How the ExoHeal devices are powered.
- 27:02 - Where our guests have gotten their wealth of knowledge.
- 29:25 - What is next in the journey of ExoHeal?
- 35:08 - When will the product be launched?
- 38:26 - The highs and lows of creating ExoHeal.

#### Links:

Learn more about [Team V Bionic](#).

Learn more about the Association for Computing Machinery (ACM) at [acm.org](http://acm.org).

Learn more about the ACM ByteCast podcast at [acm.org/bytecast](http://acm.org/bytecast).

#### Tags:

ACM bytecast, computing, Microsoft Imagine Cup, robotics, computing, change making, technology, tech industry, innovators, students, computer science, application development, CTO, software design, developers, impact, open source, exoheal, paralysis, impact, product development, STEM, medical device, physical therapy, digitization, AI