INTERVIEWS

A BUET graduate's contributions to AI in healthcare at Saudi Arabia's defence ministry

PHOTO: COURTESY

FATIMA ASHRAF

Asif Azad, a recent Computer Science and Engineering (CSE) graduate from Bangladesh University of Engineering and Technology (BUET), is currently working remotely as an artificial intelligence (AI) engineer (health services) for the Kingdom of Saudi Arabia's (KSA) Ministry of Defence (MoD). He contributes to AI-driven healthcare solutions in areas of autism and post-traumatic stress disorder (PTSD), working closely with medical professionals and centres to enhance patient care through modern AI technologies.

Campus sat down with Asif to learn more about his work, research, and his thoughts on AI and its future.

Campus (C):Could you tell us how you found yourself working with AI at an international level, and that too for the MoD of another country?

Asif (A): I had been fascinated by AI and machine learning (ML) since my third year, and by the fourth, I was lucky to have an incredible mentor, Dr Mohammad Saifur Rahman, a former Microsoft software engineer, as my thesis advisor. Most students had little hands-on experience with ML, but my practical skills stood out, and he also noticed my technical ability when I helped fix an issue on one of his machines.

About three months before graduation, Dr Saifur showed me an internal job-opening document from his friend, Dr Ehsan Hoque, a Bangladeshi-origin professor of Computer Science at the University of Rochester and a leading researcher in health AI. He was building an AI innovation team for health services under the MoD in Saudi Arabia, and Dr Saifur referred me to him. I had a 30-minute interview, thought it went terribly, and didn't follow up, assuming I wouldn't get the role. Dr Hoque mentioned I still had a few months before graduation, but they needed someone immediately, so hiring locals seemed more practical for them. For the first time in my university life, I felt a little regretful, wishing I could have graduated sooner.

Back on campus, I had started applying to other relevant job openings at local tech companies and university CSE departments, receiving multiple offers. Just as I was preparing to join one of them, I received an email from Dr Hoque confirming my selection for his AI innovation team at KSA's MoD.

C: Why would the KSA recruit AI health engineers for the MoD instead of its Ministry of Health?

A: Saudi Arabia has a large population and vast resources, and the Kingdom wants to push AI across sectors, not just limit it to healthcare. Think of it as using defence infrastructure to scale healthcare AI faster. With their focus on becoming a tech-driven country, this approach allows them to generalise AI solutions and impact a broader population efficiently.

C: Can you walk us through your current role and its impact on healthcare?

A: I work on the application side of AI to improve healthcare services, particularly for autism and PTSD. We constantly try to make life easier for those who are living with these conditions.

Take autism as an example. Many children struggle with speech and acute communication problems. They attend therapy sessions at medical centres, but there aren't enough therapists there, leaving children underserved and families exhausted.

Our work develops AI tools to support therapists, bridge communication gaps, and provide remote patient assistance so that care can reach people rather than the other way around.

C: What are some of the challenges and advantages of working remotely with an international defence ministry?

A: The toughest part is definitely the lack of face-to-face interaction. I am naturally an outdoor person, so sometimes I miss the energy of in-person brainstorming sessions where ideas bounce around more spontaneously. On the flip side, remote work also comes with big advantages. It gives us flexibility and the ability to manage our time well while still keeping projects moving forward.

Our team is quite close-knit. We meet two to three times a week online, which feels a bit like being part of a fast-paced startup while still doing research at the frontier of AI. Our professor leads the discussions, and I regularly connect with therapists, medical centre directors, and researchers to understand real-world needs. That feedback loop makes our work feel meaningful because we are designing AI tools that can actually be used in clinics.

Besides, on the infrastructure side, training and running AI models need powerful graphics processing unit (GPUs), which we access through cloud platforms like Alibaba and Azure that have dedicated data centres in Saudi Arabia. This ensures each team member has secure, high-performance resources. At the same time, we follow strict privacy rules and ethical protocols – like clinical trial approvals and consent requirements – so that the technology remains trustworthy and safe to deploy.

C: What skills, extracurricular activities, research, or competitions can help Bangladeshi students stand out for a global AI career?

A: From my own experience exploring AI engineer roles, I found that most positions in big tech companies require advanced degrees, such as a master's or PhD in fields like AI, ML, computer vision, or large language models (LLMs). For undergrads, this means two things: first, maintain a strong CGPA, which is essential for getting into top research labs, and second, get involved in research and aim to contribute to publications in top-tier AI conferences. Focusing on these will increase your chances of landing in a top-tier, renowned AI research lab, which will eventually help you secure an AI engineer role in leading tech companies.

Beyond maintaining strong academics and engaging in research, there are many other ways to stay actively involved and deepen your expertise in AI during your undergrad.

First, develop a clear understanding of AI fundamentals. Next, gain practical experience by participating in competitions like datathons.

Moreover, stay adaptable as tools and technologies evolve rapidly. Remember that tools change very fast. If you try to master every single library or framework at once, you will get overwhelmed. Instead, learn to understand each tool's purpose, its advantages, and when to use it so you can revisit it efficiently when needed.

Finally, building a personal brand is very valuable for undergrads. Share your projects, datathon wins, or other relevant achievements on platforms like LinkedIn or other professional channels where AI experts are active.

C: How do you address ethical considerations in healthcare and defence AI?

A: Ethics are non-negotiable. Before any tool is deployed or tested, we follow strict approval processes. Each country has an Institutional Review Board (IRB) or equivalent authority to review human experimental studies and clinical trials, and no project moves forward without clearance. For projects involving patients or children, we obtain informed consent from parents or guardians. Thus, these steps are essential to ensure safety, privacy, and trust.

C: Any advice for aspiring AI engineers?

A: Coming from a developing country, I understand the pressure of high expectations from family, friends, and society, often with limited resources. It can be hard to feel exceptional, but the key is to invest in yourself and consistently work on improving. Focus on reaching a level where you can make meaningful contributions to your community and country, and when you get there, give back.

Life will always have problems, but if you approach them with a smile and a positive mindset, you will realise life is not that bad. Life is beautiful.

A longer version of this interview is available online at thedailystar.net/campus.

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