

Personal Essay – Arushi Kumari

Berea College Application

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I've been curious how things move ever since I was a little. How ceiling fans spin, the noise of a bicycle chain or the way a motor brings water up from underground. Other kids requested toys; I begged my father for junky metal scraps. I come from a very mediocre family back in my remote neighbourhood in Patna, Bihar where my father runs a small kirana store and mother manages the house. We didn't have a lot of money but curiosity was free.

### My Life Experiences and Education

I spent my school years balancing responsibility and ambition. We had very little at Gyansthali High School, where I studied, but the creative potential was limitless. I would stay after school so that I could help teachers repair fan motors or little electrical tools. It is from those dusty class rooms with broken wires and possibilities than in a fancy lab, I formed my passion for engineering.

I joined a Diploma in Mechanical Engineering course in Gandhi Institute for Education and Technology after completing my schooling. I was educated in the law of mechanics, - manipulating gears, designs, formulas and efficiency behind devising machines. I liked design and automation, a place where machine intelligence meets human creativity. Working on small parts I drew a lot of parts using AutoCAD and Fusion 360 and turns out even small details changed the workability of entire systems.

As an intern I developed a system for solar water management (SWSM) at NCC Limited. It was an emotional experience as much as a technical one. I saw the way that engineering could transform the situation in villages where it was difficult to get clean water. It made me realise that engineering is about people not just machines while I was sweating it out on a roof helping to put up some solar panels. Today, I live by the lesson that experience taught me: technology is meaningless unless it serves people. At the same juncture, I began research on AI and its application into mechanical design. I got certified online in AI Fundamentals (IBM) and Generative AI. I was involved in projects such as an AI chatbot assistant, a robotic arm simulation, and object tracker using computer vision. Imagine that I could put the precision of machines together with the insight of a machine learner? Every project made me think larger. That question became my goal.

### Plans for the Future

I want to pursue Artificial Intelligence for my bachelor's degree. I want to build intelligent machines that can learn, predict and make industries work better. I want to build cheap automation systems that will allow small manufacturing businesses in developing countries to

compete globally. I intend to be a researcher engineer in the future. I'm interested in developing machinery that employs AI to make manufacturing safer, smarter, and more sustainable. I don't want to work for a company — I want to start my own business that's focused on delivering AI-based solutions for actual community needs, like smart farming tools and renewable-energy systems.

### Going back to my home country

Once I have my degree and some international experience, I am going back to India. I want to set up a community innovation lab in Bihar where young people, especially girls from small towns, can learn robotics, design and A.I., without buying expensive tools. I understand what it's like to grow up poor and be told, "This is not for you." But I do believe I can help other people change that. It will make the most difference to me if I can help even just a couple students believe in their ideas and provide them with tools that when I was younger I could only dream of.

### What I've done for my community

I have tried to make small changes even while I was in school. I teach kids in my area basic science and computer skills. This helps them see that learning can be fun and creative. While I was getting my diploma, I volunteered for solar energy and sanitation projects in nearby villages. There, I learnt how important it is to work together and care about others. I began an informal "Learn by Doing" circle in college, dragging classmates to work on mini-projects and CAD models that were not part of the curriculum. I was not the best student on paper, but I did always believe that you apply knowledge — even if your experiment fails, you learn something new.

### Why I Wish to Study Abroad

Having grown up in a situation where opportunities are few, I became accustomed to making them. But there are apparently limits that such global exposure has led to crowds and long wait times, but it does not supply people with real opportunity to be influenced on a large scale. Studying abroad will give me access to world-class labs, mentors, and peers who share the same hunger for innovation. I don't just want to learn; I want to help. I think my journey, my struggles, and my vision will bring a new voice to the classroom.

I still have the same curiosity about machines that I did as a child in Patna. But now I look at the world and wonder how I can make it better by being smarter, fairer, and kinder.

### In conclusion

I want education to be the thing that changes lives around me, just like it changed mine. I started by fixing school tools and now I'm designing robotic systems. It has been a long road full of uncertainty, experiments and learning and I am just getting started. I envision a time

when technology is driven by compassion and intelligence, and engineers create hope rather than just machines. I'm prepared to create, to learn, and to serve. In addition to molding my career, this opportunity will mold the kind of person I wish to be.