

Shraman Kar

Senior (12th Grade) at duPont Manual High School, Louisville, KY

Stanford University Class of 2028

Achievements:

Empowering youth from 58 countries to unleash AI for social good and received the following awards: International Diana Award, Yale Bassette Award, Prudential Emerging Visionaries Award, Sodexo Stop Hunger Award, Daily Points of Light, Carson Scholar award among others.

AI research received recognitions like Regeneron STS Scholar, World Science Scholar, National JSHS Finalist (2 times), 7th in the nation in TSA in Data Science and national 5th in Software Development, First place winner Xylem International Hackathon, national 4th Modeling the Future Challenge, 3× AIME Qualifier, Top 10 international winner at Spellman Clean Tech Competition, International 1st Place winner for ASU Wells Fargo Community Innovation Award (2 years), Congressional App Challenge Winner and numerous awards in Science Fairs.

Autobiography:

I was motivated to use technology to help solve some of the social problems since my middle school years. I built an AI-powered system called Foodle that helped anybody to donate their excess food by simply keeping the food in a camera and sensor-enabled basket. The food would appear on the app with its precise location, picture, and description for somebody to pick it up. Seeing the success of “Foodle” made me wonder if more students like me do similar projects. I started working with many friends, started an AI club in our school, and built many projects. To unleash the potential of AI for social good I cofounded a 501(c)(3) organization Community AI (www.thecommunityai.org) in the year 2000. We created a customized course of Machine Learning suitable for a wide range of school-going youth and delivered via free camps. Our camps became very popular and we could mentor students from 58 countries and all 50 US states. Our members have several projects to help the community and the environment - ranging from automatic trash segregation to detecting wildfire before it happens and many more. To encourage more students to build AI-driven projects we provided funds/prizes via the AI Fair called Sustainability and Community AI Fair (www.communityaifair.com).

While the development of these projects was inspiring, I noticed many inherent design flaws in AI systems themselves which limited us. Some of our members faced issues such as biased training data that produced skewed models and the requirement of expensive resources to run them. This made me realize that making AI accessible was not just about accessible education and a community of motivated members; the technology itself needed to evolve. I was taking dual credit CS and math classes at the University of Louisville and was also teaching as a tutor. Inspired by one of my CS professor’s lectures, I discussed with him an idea to simplify AI models to run on smaller devices. He was enthusiastic about the idea. With his guidance, I started researching to make AI models less computationally complex to allow more people including our members at Community AI to use them on devices they can afford. I made some headway into the research, got awarded as an STS scholar, and continued to research dynamic pruning and quantization to reduce the sizes of AI models.