Crop infestation to maternal risks: How tech helps

Rocket Learning is taking personalised education to public schools

TECH FOR GOOD

Amin Ali

Wadhwani AI, the non-profit founded by entrepreneurs Romesh Wadhwani and Sunil Wadhwani, has developed a smartphone and AI-based early warning system for pest infestations in cotton crops. The system uses an Android application called CottonAce, which has been trained and validated on over 18,000 images of pests obtained from farms. The AI algorithm works by analysing images from pest traps. The algorithm identifies and counts the pests in the photo, determines the level of infestation, and gives a set of actionable advisory to the farmer. It even informs neighbouring farmers and issues a warning to contact the local officer if the pest infestation is serious.

Annie Lewin, senior director of global advocacy and head of Asia-Pacific in Google.org, the charitable arm of the search giant, says this is one great example of technology helping with social causes. And Google, she says, is using its phenomenal prowess in technologies like AI to aid such causes.

AI, Lewin says, is very good at computer vision, being able to learn to recognise images that would either take humans a long time to do or is very hard to do. With the farm infestation tech, she says, farmers have been able to reduce usage of pesticides, save their crops and seen profits go up by 20%. The same technology is now being extended to 10 staple crops.

Another instance of AI in social work, Lewin says, is helping non-profits with lean teams and leaner budgets deal with large and complex data sets. One of Google.org's grantees is Armman, which seeks to reduce mortality in new mothers and children. Armman works with the enormous amount of data collected through the health worker network of the government and partner NGOs, and uses AI to understand which expectant and new mothers are most at risk, and know when to introduce human interventions. Through its free mobile voice call service, it sends timed and targeted preventive care information weekly/bi-weekly directly to the phones of the enrolled women in their chosen language and time slot. And they use mobile connectivity to improve access of pregnant women and mothers to preventive information and services, along with training health workers to reduce maternal and child mortality/morbidity.

Natural language processing (NLP), Lewin says, is another technology that holds huge promise in social projects, with its ability to offer personalised solutions in local languages to people at scale. One of Google's Indian grantees is Rocket Learning. The venture, Lewin says, has an ambitious plan to engage every child and parent in public schools across the country. Rocket Learning uses generative AI models and machine learning to develop an AI coach that can create localised academic content, automate grading, and offer personalised learning paths. It also links the government school and Anganwadi system with parents, using technology, media and social influence techniques.

Lewin says many non-profits told Google.org that while money grants are good, they would also need Google's tech expertise to make a bigger and faster impact. Google, she says, has also encouraged its employees to go out and embed themselves with non-profits to develop tech solutions. "Over the years, over 400 Google employees have taken part in and contributed 45 years of pro bono work," she says.

> "A lot of young techies are starting social impact organisations. They are helping people find affordable housing, government agencies build websites, helping people fill their social benefit forms efficiently, helping universities improve their student performance, advising doctors on antibiotic usage. And Google's trying to help such ventures with our AI capabilities.
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> **Annie Lewin** | SENIOR DIRECTOR, GLOBAL ADVOCACY, GOOGLE.ORG