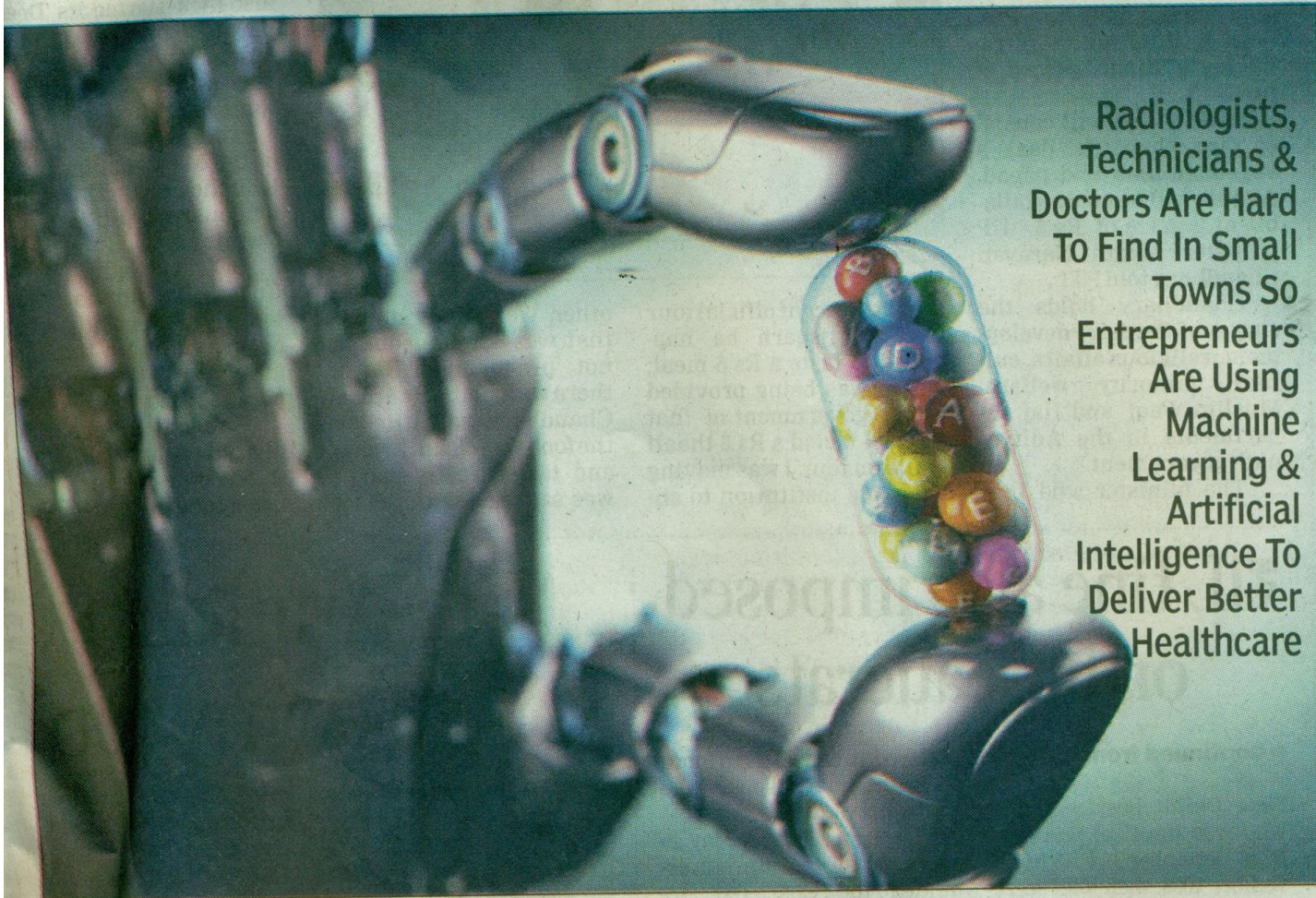


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Why startups think AI can BRIDGE HEALTH GAP



Radiologists, Technicians & Doctors Are Hard To Find In Small Towns So Entrepreneurs Are Using Machine Learning & Artificial Intelligence To Deliver Better Healthcare

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As a researcher at Xerox Research Centre in Bengaluru, Geetha Manjunath always wondered why thermal images weren't used to detect breast cancer.

"I thought it would be a non-invasive, non-radiation and non-intrusive method to examine women," she says, adding that some women are reluctant to have regular mammograms.

She spent three years doing research and analysis, and in 2016, co-founded Niramai, an artificial intelligence-based healthcare startup which uses thermal imaging and AI to screen for breast cancer. Niramai has signed up a couple of hospitals for its subscription model.

More than a billion diagnostic tests are done in India every year in thousands of small labs and centres, many without the right equipment. A shortage of radiologists, pathologists, technicians and doctors, especially in small towns, means the results are rarely read accurately or explained to the patients. And that's where entrepreneurs are stepping in, using machine learning and artificial intelligence to bridge this gap.

Prashant Warier, founder of Qure.AI,



FINDING A FIX: The SigTuple team is building intelligent healthcare-screening solutions

a healthcare startup building deep-learning solutions to help physicians with routine diagnosis and treatment, says technology can improve efficiency and productivity of the healthcare system.

More than 100 companies across the world are applying machine learning algorithms and predictive analytics to reduce drug discovery times, provide virtual assistance to patients, and diagnose ailments, according to data from CB Insights. Deals in healthcare-focused AI

startups rose from less than 20 in 2012 to nearly 70 in 2016, it says. In India, research consultancy Zinnov says 169 startups are working in the AI space. Venture capitalists have invested \$36 million in the sector, it says.

"People are waking up to AI and hospitals and doctors are ready to experiment. AI in healthcare also reduces the cost for patients," says Warier.

Qure.AI algorithms can simultaneously look for and diagnose 15 diseases.

"Every time we make a correction in the system after intervention, it learns from it, just like humans study and correct themselves," says Warier. While doctors and radiologists might take up to an hour to make a diagnosis, the algorithms can do it in under a minute.

Most startups are in the diagnostic space. "For India, it is the most relevant space and an easy first step for an AI company. Treatment comes later. There is a lack of good diagnosis options in smaller towns," Warier says.

Bengaluru-based SigTuple is building intelligent screening solutions to aid diagnosis through AI-powered analysis of visual medical data. It is focussing on five major high-volume, screening processes of the healthcare industry — analysis of peripheral blood smears, urine microscopy, semen, scans and x-rays.

Founders Rohit Pandey, Tathagato



“People are waking up to AI and the hospitals and doctors are now ready to experiment. It also reduces the cost for patients”
Prashant Warier

FOUNDER, QURE.AI

“Artificial intelligence, thermal imaging and other technology do not require touch during diagnosis and hence are not intrusive for patients”

Geetha Manjunath
CO-FOUNDER,
NIRAMAI



Rai Dastidar and Apurv Anand spent two years on research and learning before they were ready for a commercial launch. "The initial thought was to use intelligent data for social impact, and healthcare was a big sector. Most of our initial research was on publicly available data to identify abnormalities," says Pandey.

SigTuple partnered with local diagnostic centres that were willing to share samples. "The machine was given as much data as possible to reach 100% accuracy in predicting abnormalities," says Pandey. The company's board comprises healthcare experts, doctors, ethics and legal experts, and pathologists to corroborate the machine's learnings and results.

Investors do have reservations about the scalability of such businesses and the time taken for such products to gain wide acceptability. "These startups will take five to seven years before they can meaningfully scale," says Manish Singhal, co-founder of Pi Ventures, a fund focussed on supporting AI startups. He says the companies will be ready for sizeable funding in a couple of years. "While developing AI software in itself is not capital and human intensive, the deployment or operations are often cash burning," says Singhal.