

Singapore: Researchers design AI-based weather insurance policy for farmers



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Researchers have used machine learning to design a more cost-efficient insurance contract that could better protect farmers against weather risks arising from climate change.

A research team, co-led by Associate Professor Zhu Wenjun and Assistant Professor Zhang Jingong from Nanyang Business School of Nanyang Technological University, used a type of artificial intelligence (AI) called neural networks to uncover intricate relationships between weather variables such as temperature and rainfall, and crop production losses, according to a blog on the *Research* section of the university's website.

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The complex relationships unearthed were remarkably different from those described by conventional linear models that are more straightforward.

Research outcome

Based on the results of their empirical case study, the researchers designed an AI-based weather index insurance contract for farmers. The contract could improve policyholders' wealth by nearly 5% with a 37% lower price compared to the current average price considered in the study. This stands to improve market demand for such products.

The findings open the way for governments to optimise initiatives to reduce the financial burden on public agencies and develop innovative measures to help the agriculture sector during a climate-related crisis.

The new insurance policy could also enhance the overall wellbeing of farmers by helping them get the most benefit from the policy and feel more secure about their financial situation, despite challenging climate conditions.

The outcomes of the research also set the stage for a paradigm shift in using AI to design financial products potentially across borders and even those in industries beyond agriculture.