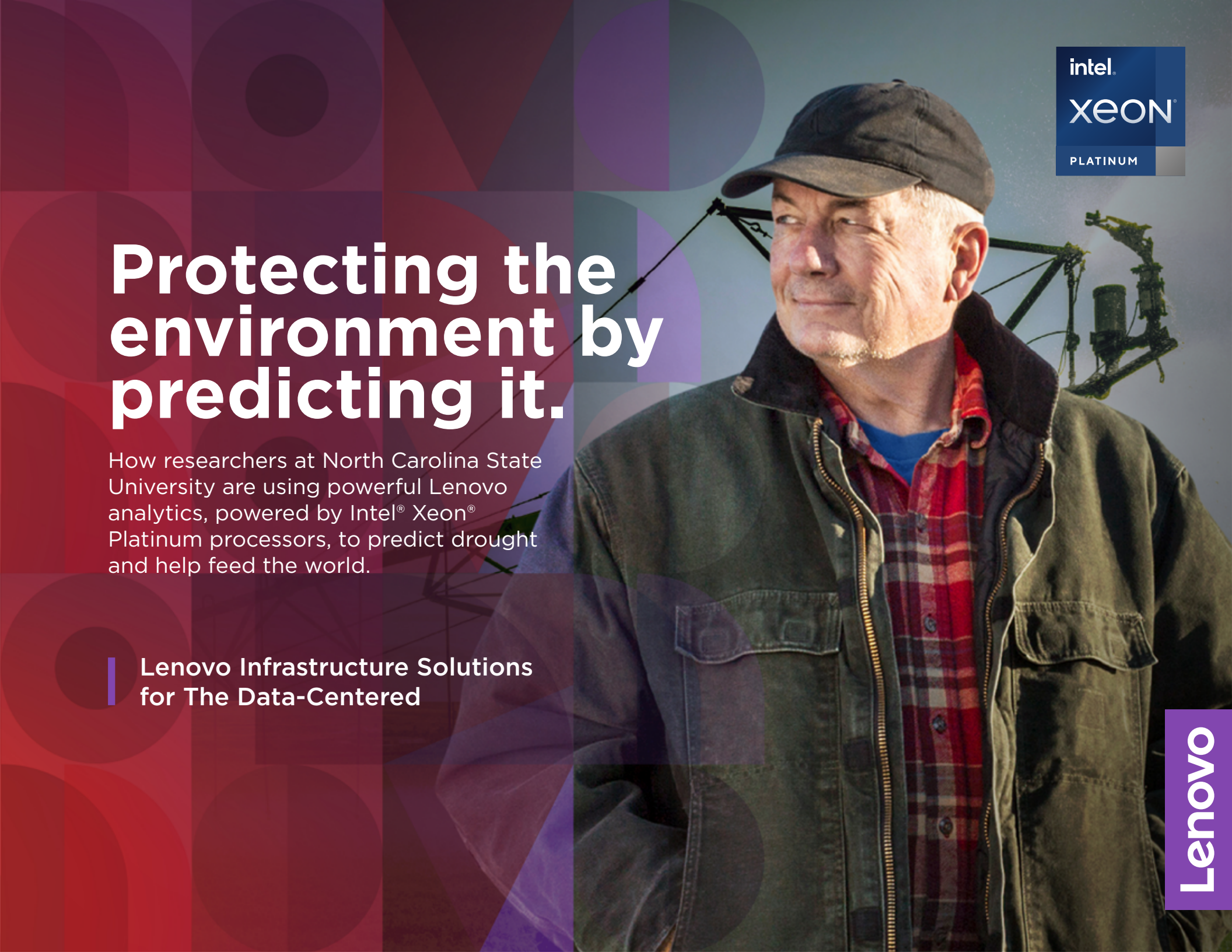
Protecting the environment by predicting it.

How researchers at North Carolina State University are using powerful Lenovo analytics, powered by Intel® Xeon® Platinum processors, to predict drought and help feed the world.

Lenovo Infrastructure Solutions for The Data-Centered



1

Background

According to the United Nations, the world's population is expected to grow by 3 billion within the next 30 years. To feed that many, food production will need to double.

But as of today, we're already using 70% of the planet's freshwater for agriculture. There isn't enough water or land to sustain current farming practices, let alone to grow twice as much.

Researchers at North Carolina State University (NCSU) — a leading public research university with over 34,000 students — are working on a sustainable solution.

Inside their Center for Geospatial Analytics, they're starting to find and analyze patterns in spatiotemporal data sets in order to better understand and eventually predict large-scale climate events like floods, droughts, wildfires, and crop yields.

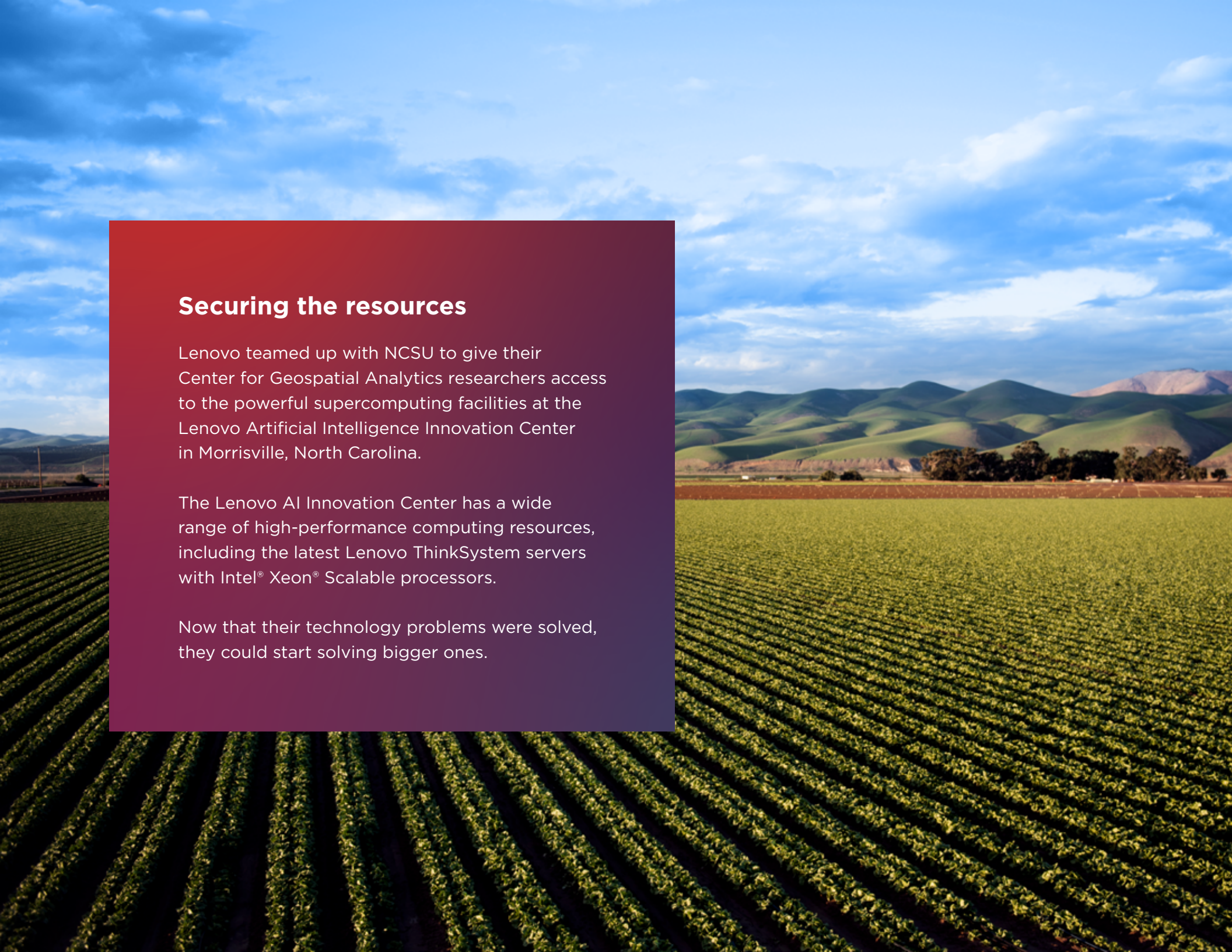
By doing this, they can help large-scale farms determine when to water their crops and when to hold back — saving the resources we so desperately need.

2

Challenge

In order to analyze such large, high dimensional heterogenous datasets for such a large-scale problem, their team needed high-performance computers with the latest AI and deep learning technologies.

However, they were having a hard time securing the academic funding needed to purchase them.



Securing the resources

Lenovo teamed up with NCSU to give their Center for Geospatial Analytics researchers access to the powerful supercomputing facilities at the Lenovo Artificial Intelligence Innovation Center in Morrisville, North Carolina.

The Lenovo AI Innovation Center has a wide range of high-performance computing resources, including the latest Lenovo ThinkSystem servers with Intel® Xeon® Scalable processors.

Now that their technology problems were solved, they could start solving bigger ones.

> Having access not just to the Lenovo technology, but also to Lenovo's expertise, is extremely valuable. They helped us to develop new algorithms that will enable us to analyze many more data streams in near real time.

Dr. Raju Vatsavai
Associate Director of Spatial Computing and Technology, NCSU

3

Results

With their new AI capabilities, the NCSU Center for Geospacial Analytics researchers can analyze huge amounts of sensor data from farms across the United States.

Based on regional weather patterns, they are now able to predict the best times to irrigate crops — reducing water waste and improving sustainability, as a result.

- **Analyzing more data, faster**
- **Accelerating projects with new algorithms**
- **Reducing water waste**
- **Changing the world**

Supported by Lenovo, we can process and analyze spatiotemporal data faster, get results quicker, and apply exciting new AI and big data technologies to solve real global problems. Behind all the number-crunching, it's about changing the world.

NC STATE UNIVERSITY

Dr. Raju Vatsavai
Associate Director of Spatial Computing and Technology, NCSU

Where will AI & analytics take you?

A better future begins by taking your business from data center, to Data-Centered. AI and analytics can help you get there.

Explore Analytics & AI Solutions

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