Remote sensing Presents an innovative technique for monitoring and sensing to soundings events with ongoing and detailed spatial coverage through satellite-based, aircraft-based, or drone-based sensor technologies. That was a reason to Substantially enhance our awareness of climate change and its Possible effects at global, regional, and regional scales. The information that is obtained through remote-sensing technologies can also be utilized to confirm our climate models, enhance our awareness of the physical and dynamic processes that inherent within the climate system, and assist in forecasting possible climate change and its Implications with decreased ambiguities.(Wang, 2023).The remote-sensing technologies are continuously developing consisting of advanced satellites and modern approaches for extensive data processing, Is fundamental to enhance the accuracy and reliability of climate change research utilizing remote-sensing data.(Wang, 2023)

Remote sensing has a major impact to The structures for big data analysis and techniques of artificial intelligence. High-level techniques such as Convolutional Neural Networks (CNNs) and Long Short-Term Memory networks (LSTMs) Assist with the extraction of detailed patterns from vast data collections, consequently allowing real-time monitoring, forecasting models, and informed decision-making.(Dritsas & Trigka, 2025).