



# Generative AI for Geospatial Challenge



# **Property-Level Risk Insights from Predictive Modeling**

Tera Analytics is developing Tera GeoGAN, a generative AI platform that uses satellite imagery, disaster datasets, and GAN models to predict environmental risks. By combining Pix2Pix GANs with vector databases, the system enhances damage analysis and generates property-level Risk Index scores to support disaster planning, insurance, and public safety.





## **GAN-Powered Damage Analysis**

Uses pre- and post-disaster imagery to model damage patterns, predict future risk, and simulate 'what-if' environmental scenarios.

### **Property Risk Index Generation**

Combines historical weather, geospatial layers, and post-disaster models to deliver site-specific environmental risk scores.

#### Team:

Tera Analytics (Robert Carroll, Charles Mondello)

#### **Applications**

- Disaster Planning and Response:
  Delivers faster, high-fidelity
  assessments to support emergency
  services and resource allocation.
- Insurance and Risk Management:
   Provides accurate, property-level risk indicators for underwriting and portfolio assessment.
- Sustainable Infrastructure
   Planning: Supports climate
   adaptation by forecasting the impact of flooding, wildfires, and land-use change.

#### **Key Features**

- GAN + Vector Database Integration: Leverages Pix2Pix GANs with structured geospatial datasets for precision modeling.
- High-Resolution Satellite & Drone
   Data: Uses diverse imagery sources
   for granular, timely analysis.
- Proactive Scenario Simulation: Enables decision-makers to plan for future environmental events, not just react to them.