

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.





Personalized Risk Reports

Homeowner-Friendly Risk Summaries

- Generate customized, easy-to-read reports explaining a property's risk score/key vulnerabilities.

Actionable Insights for Homeowners

- Tailored mitigation plans (e.g., upgrade roofing, clear vegetation).
- Homeowners can ask AI-driven assistants about specific risks, potential upgrades, and expected ROI on mitigation efforts.

The Result

- Empowers homeowners with clear, data-driven risk insights.
- Improves decision-making insurers by providing property-specific risk.
- Encourages proactive mitigation, reducing long-term damage and insurance costs.



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.

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.

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.

Team:

Tera Analytics (Robert Carroll, Charles Mondello)