QUAKELOGIC

AI-POWERED EARTHQUAKE RISK MANAGEMENT SOLUTIONS

PROBLEM

After a quake, organizations may face pressing challenges including whether to utilize or evacuate structures, restore interrupted operations and repair damaged facilities or equipment. Accurate information is needed to make rapid and informed decisions. Early assessment of the structural integrity not only saves lives, but also minimizes downtime.

SOLUTION

QuakeLogic is the only company offering Artificial Intelligence (AI)-powered earthquake risk management solutions to prevent and reduce human and economic losses seen during and after earthquakes. After an event, our platform performs structural assessments, and sends rapid notifications with the level of shaking intensity and whether structural integrity was compromised.

Only the QuakeLogic's cutting-edge technology gives the most critical information on structure's performance rapidly after shaking to prioritize post-quake inspections and prevent unnecessary evacuations and interruptions to ongoing operations.

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STRUCTURAL HEALTH MONITORING SOLUTIONS FOR DAMS & RESERVOIRS

SYSTEM FEATURES

- Real-time Continuous Waveform Analysis
- Web Application (Dashboard)
- Cloud or On-site Monitoring
- Listening Earthquakes for Triggering
- Threshold Triggering
- Text & WhatsApp Notifications
- API (Application Program Interface)
- Multi-level Reporting
- Condition Monitoring
- State-of-health Monitoring
- Platform Works with Various Sensors:
  - Accelerometers
  - Potentiometers
  - Strain Gauges
  - Thermocouples
  - Weather Stations
  - Piezometers & Seepage (Weirs & Flumes) Sensors
- Ambient Data Collection
- 3D Visualization
- Real-time Motion Capture & Image Processing

COMPUTATIONAL FEATURES

- AI & Machine Learning
- Normalized Crest Settlement (NCS)
- P-phase & S-phase Picking
- Polarization
- Acceleration & Disp. Response Spectra
- Newmark Displacement Spectra
- Spectrograms
- Horizontal-to-vertical Spectral Ratios
- Coherence, Cross Spectrum Phase & Cross Correlation
- Fourier Amplitude Spectra
- Power Spectral Density
- Intensity Measures:
  - PGA & PGV
  - Arias Intensity, CAV, RMS Acceleration, Duration Interval
  - Cumulative Arias Intensity
- Custom Fragility Function Integration
- USGS-PRISM Processing (COSMOS)
- Input Energy Computations
- Modal analysis

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🌐 www.QuakeLogic.net

📞 +1-916-258-3736

✉ info@quakelogic.net

WE ARE LOCATED AROUND THE GLOBE TO SERVE TO PEOPLE

QuakeLogic
Headquarters
R&D Center
California, USA

QuakeLogic **UK |** Glasgow

QuakeLogic **Italy |** Sarzana

QuakeLogic **Turkey |** Ankara

QuakeLogic **Puerto Rico |** San Juan