



Disaster Risk Management Solutions

## CAPABILITY STATEMENT

QuakeLogic delivers advanced AI-driven cloud-based risk management solutions tailored for government and state agencies, as well as businesses, aiming to safeguard against the liabilities and financial losses experienced during and after natural and man-made disasters. Additionally, QuakeLogic engages in academia to develop comprehensive analytical methodologies, alongside experimental and theoretical research within the realms of seismic, structural, and geotechnical engineering. QuakeLogic also provides the state-of-the-art monitoring and testing equipment for lab and field environment.

FEDERAL GOVERNMENT	CALIFORNIA
DUNS: 117204621 CAGE code: 8EQM1	California State Small Business Certification: 2016403
NAICS codes: 541715, 541330, 541690, 541990, 541519, 541360	UNSPSC codes: 20122600, 20122601, 20122602, 20122622, 20122623, 26142117, 41114106, 43232605, 46171631, 71151105, 81101505, 81101514, 81111810, 81150000, 81151900
SAM registered with SBA profile	

### CORE COMPETENCIES

- Expertise in Disaster Risk Management and Structural Health Monitoring to enhance resilience and safety.
- Proficiency in Earthquake Early Warning Systems for prompt and effective response.
- Advanced Seismic Monitoring capabilities to detect and analyze seismic activities.
- Specialization in Borehole Instrumentation for detailed subsurface investigations.
- Seismic monitoring and instrumentation for geothermal and LNG facilities.
- Comprehensive Hydrological and Environmental Monitoring to assess and manage water resources and environmental impacts.



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- Land Degradation Neutrality (LDN) Analytics and Reporting aligned with UN SDG 15.3.1 using AI-integrated satellite data and soil carbon assessments.
- Skilled in Machine Vibration Monitoring and Analysis for industrial and engineering applications.
- Cutting-edge Artificial Intelligence and Machine Learning technologies for predictive analytics and intelligent solutions.
- Facility Post-Earthquake Inspections to assess and address potential damage.
- Facility Seismic Compliance Inspections to ensure adherence to safety standards and regulations.
- Conducting Small-to-Large Scale Research Studies and Program Evaluations to inform policy and practice.
- Extensive experience in Instrumentation and its Maintenance to ensure optimal monitoring performance.
- Development and deployment of Warning Systems, including installation, repair, and servicing to mitigate risks.
- Innovative Software Development and Implementation for customized solutions.
- Provision of Shake Tables for experimental and educational purposes.
- Shake Table Installation and Maintenance Service to support experimental and research activities.
- Actuators and Loading Frame Installation and Maintenance Service to support experimental and research activities.

### SOFTWARE SOLUTIONS & DIGITAL PLATFORMS

- QuakeAlert – Real-time Earthquake Early Warning with AI-enhanced detection and cloud alerting
- PulsePro – Advanced infrasound monitoring platform for noise and explosion event detection
- SMARTMONITORING Suite – Modular SHM system including SMARTBUILDING, SMARTBRIDGE, SMARTDAM, and SMARTTUNNEL
- SMARTENVIRONMENT – AI-driven environmental and soil health monitoring software platform for LDN tracking, salinity/erosion mapping, and predictive land degradation analytics



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- PRISM – Automated ground motion processing system adopted by USGS
- Microseismic Monitoring Platform – For mining and subsurface activity characterization
- Data Processing Software – Tools for seismic signal analysis, event detection, filtering, and spectral evaluation
- USGS ShakeMap & ShakeCast Software – Deployment and customization for real-time impact-based alerts and structural inspection prioritization
- Custom Earthworm & SeisComP Installations – Tailored for local, regional, or national seismic network integration

## PRODUCTS

- High resolution accelerometers & multi-channel data loggers
- Earthquake early warning software, seismic switches and sensors
- Mass notification hardware & software
- Seismic, soil, environmental, and hydrological sensors, and digitizers
- Small-to-large scale shake tables
- Hydraulic actuators
- Loading frames design and manufacturing

## CREDENTIALS AND LICENSES

- California professional engineer license (CEO, Erol Kalkan)
- California small business certification
- New Jersey small business certification

## UNIQUE VALUE PROPOSITION

With over 27 years of leadership in seismic monitoring, structural diagnostics, and engineering innovation, QuakeLogic stands at the forefront of resilience-focused infrastructure technology. Our multidisciplinary expertise spans the full spectrum of hazard monitoring, advanced analytics, and engineering design:

- Deployment of advanced instrumentation and warning systems for critical infrastructure, including buildings, bridges, dams, and tunnels



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- Proven experience in seismic network operations management for national agencies such as USGS and CGS
- Comprehensive solutions for earthquake monitoring and real-time response systems
- Integration of AI and machine learning algorithms for structural health monitoring and early warning automation
- Expertise in signal processing, data fusion, and large-scale seismic data management
- Development of seismic hazard and risk models tailored for infrastructure, energy, and public safety applications
- Delivery of end-to-end consulting services in structural, geotechnical, and earthquake engineering
- Specialized capabilities in post-earthquake inspection and rapid damage evaluation
- Ongoing contributions to academic and applied research in structural dynamics and disaster mitigation
- Design and implementation of custom shake tables, loading frames, and actuators for experimental validation and training



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### PAST PERFORMANCE AND CURRENT PROJECTS

- Managed the USGS strong-motion seismic network and associated seismic projects for over 11 years, contributing to national earthquake resilience strategies.
- Led California Geological Survey seismic monitoring initiatives for 4 years, including statewide hazard assessments and instrumentation programs.
- Executed over 40 structural health and seismic instrumentation projects across the U.S., covering buildings, bridges, tunnels, and dams in high-risk seismic zones.
- Designed and deployed the SHM system for the Galena Creek Bridge in Reno, Nevada—the world's largest concrete cathedral arch bridge—in collaboration with UNLV and Georgia Tech.
- Installed seismic and SHM systems for the 1915 Çanakkale Bridge in Turkey, the world's longest mid-span suspension bridge, including downhole accelerometers and real-time analytics.



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- Collaborated with ETH Zurich for SHM and vibration monitoring of a Swiss Railway Steel Bridge, showcasing advanced international partnership capabilities.
- Delivered the largest hospital SHM deployment in the U.S., involving 28 hospitals across California, Alaska, and Puerto Rico in seismic zones.
- Instrumented the Science and Engineering Building at the University of Nevada, Las Vegas for structural response and hazard analysis.
- Implemented SHM systems for major dam infrastructure, including Walnut Canyon Dam (Anaheim, CA) and Prado Dam (Corona, CA).
- Installed full SHM systems in One Rincon Tower, San Francisco—the tallest all-residential building in the western U.S.
- Managed SHM and early warning integration for the world's tallest concrete building in Kuwait City.
- Deployed SHM and vibration monitoring for three railway steel bridges in India, alongside microseismic monitoring of an active coal mine.
- Conducted cloud-based SHM for Rosendo-Salazar Dam (Mexico) and Ribeiradio Dam (Portugal), with real-time web dashboard integration.
- Delivered custom SHM systems for multiple dams in Chile, supporting infrastructure safety, mining operations, and environmental compliance.
- Developed and deployed SHM for a European Bank facility, integrating AI-enhanced monitoring for structural and operational resilience.
- Supported Grand Mosque structural monitoring in Kuwait, ensuring cultural heritage preservation through advanced instrumentation.
- Installed Earthquake Early Warning Systems (EEWS) for energy and industrial clients including ENERJISA (Turkey) and SONOCO (USA), enabling real-time alerts for operational safety.
- Provided seismic compliance consulting and instrumentation for ARDAGH Group's manufacturing plants in Washington and California.
- Led borehole, seismic, and environmental monitoring for critical infrastructure sites across Alaska, including:
  - Port of Alaska in Anchorage – Deployed borehole seismic stations, environmental sensors, and a cloud-based analytics platform for real-time monitoring and remote access.



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- Glennallen, Alaska – Implemented DOT bridge instrumentation, borehole seismic arrays, soil condition monitoring, and environmental sensors to support infrastructure resilience.
- Barrow, Alaska – Executed full-site deployment of borehole seismic instrumentation, atmospheric sensors, and subsurface soil monitoring systems for long-term environmental tracking.
- Contributed to public policy development through seismic performance evaluations and building code recommendations for residential structures in Kuwait, aligned with life-safety and resilience standards.



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#### FEATURED CLIENTS IN THE US

- Ardagh Group
- ASIR Seismic
- Ball Manufacturing
- BDI
- Benchmark Space Systems
- Caltech
- California Department of Water Resources
- Central Washington University
- City of Anaheim
- Coach Glass
- Cooper Union University
- Colorado State University
- Cummins Inc.
- Desert Research Institute
- Droplet Measurements LLC
- Engineered Equipment
- EV Charge Solutions
- Florida Polytechnic University
- Georgia Tech
- Helix Electric
- Kiewit Infrastructure West Co.
- Lehigh University



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- Marathon Petroleum Corporation
- Marvel Electronics
- Metropolitan Acoustic
- Missouri University of Science and Technology
- Nevada Department of Transportation
- New Mexico Tech University
- NOKIA
- Rowan University
- Seattle University
- Southern Illinois University
- Southern Utah University
- Stevens Institute of Technology
- SONOCO
- Texas AM University
- University of California Berkeley
- University of California San Diego
- University of Houston
- University of Missouri
- University of Nevada Las Vegas
- University of Nevada Reno
- University of New Hampshire
- University of Texas Rio Grande
- University of Texas Arlington
- University of Washington
- United States Geological Survey
- U.S. Air Force
- U.S. National Park Service
- Utility.com
- Virginia Tech

#### FEATURED CLIENTS AROUND THE GLOBE

- Australia:
  - University of Queensland
  - University of Sydney
- Belgium:
  - University of Catholique de Louvain



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- Canada:
  - University of Alberta
  - Universite De Moncton
  - University of Toronto
- Chile:
  - Universidad de Los Andes
  - Diego Portales University
- China:
  - Zhejiang University
  - Ningbo Institute of Digital Twin (EIAS)
  - Harbin Institute of Technology
  - Geolight
  - USTC, University of Science and Technology of China
- Colombia
  - Universidad de Los Andes (Bogota)
- Cyprus:
  - Middle East Technical University Northern Cyprus
- Finland:
  - University of Helsinki
- France:
  - École Centrale de Nantes
  - EDF
  - Sixense
  - CEA
- Iceland:
  - Reykavik University
- Italy:
  - Istituto Nazionale di Oceanografia e di Geofisica Sperimentale - OGS
  - University degli Studi di Padova
  - Università degli Studi di Cagliari
- India:
  - National Geophysical Research Institute
  - Wadia Institute of Himalayan Geology
  - IIT Kharagpur
  - GeoConsol.
  - Roorke Institute of Technology
- Israel:





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- Maabadot Ltd.
- Germany:
  - GFZ-Postdam
- Greece:
  - University of Athens
  - National Observatory of Athens
- Kuwait:
  - Kuwait Scientific Research Institute
- Mexico:
  - Universidad Autónoma de Baja California
  - National Autonomous University of Mexico
  - Government of Mexico Department of Water
  - VASE Sismica
- Philippines:
  - Deco Trading
- Poland:
  - Politechnika Krakowska
- Portugal:
  - NOVA University Lisbon
  - Grupo Alava
- Singapore:
  - Cambrian Engineering
- Spain:
  - Universidad Complutense
  - Universidad de Alicante
- Switzerland:
  - ETH-Zurich
  - Infra-Sens
- Thailand:
  - Mahidol University
- Turkey:
  - DLSY JV (Daelim, Limak, SK and Yapi Merkezi)
  - ENERJISA
  - Schindler
- Qatar:
  - Qatar University
- UAE:
  - American University of Sharjah



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- UK:
  - Imperial College in London
  - Brunel University



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