NIYAM IT™

A 202 Church St SE #301
Leesburg, VA 20175

P +1 315.542.5489

E www.niyamit.com
kwhiting@niyamit.com

CMMIDEV/3™   US SBA 8(a) CertifiedISO 9001:2015

Predictive Analytics
at Niyam IT

Our team works with industry experts in data science and predictive modeling to implement big data and open source technology for public agency projects that make an impact.

The Big U - a New York City Rebuild by Design project - aims to avert millions of dollars in flood losses through protective waterfront landscaping by 2022 📷 Bjarke Ingels Group

Case Study: Risk Analytics

The Niyam Predictive Analytics Team provides custom tools and expertise to help public agencies assess and reduce their risk to natural hazards like floods, hurricanes, earthquakes, and tsunamis. Our team manages FEMA's Hazus Program - one of the world's leading open, publicly funded risk models. We lead development of Hazus software, scientific methodologies, and nationwide strategies for risk assessment and communication by working closely with research institutions, engineers, and public agencies at every level of government.

Risk management strategies are often disconnected from science and technology. Leading agencies like the U.S. Geological Society, National Hurricane Center, and the National Institute for Standards and Technology provide detailed hazard information. Hydrological and Structural Engineers help us understand where buildings are most vulnerable. Cloud computing and visualization technologies show the interaction between hazard and vulnerability at increasingly fine resolution. These diverse industries must be brought together to measure risk and communicate it effectively.

Road damages sustained during the November 2018 magnitude 7.1 Alaska Earthquake 📷 NBC News

Tech with a Mission

Our work helps planners and policymakers across the U.S. and abroad reduce risk to natural hazards by planning for disaster impacts and funding effective resilience strategies.

Solutions

Niyam analytics experts work at the center of science, technology, and policy to ensure smarter risk management at every level of government. We bring decades of experience leveraging interdisciplinary science and technology to drive risk management solutions. We are a diverse group of experts in software development, hazard science, engineering, data analytics, risk communication, and public policy – this breadth of knowledge allows us to manage complex risk analysis projects that make big impacts.

Flood waters and a fallen tree following Hurricane Dorian, Wilmington, NC, September 2019 📷 Reuters

Our Tools

- Amazon Cloud S3 Storage
- Python & R Models, Jenkins Build
- Tableau, KIbana, Apache Hive
- SQL, MongoDB, PostgreSQL
- Agile Scrum, eXtreme Programming
- Pentaho Data Integrator, Apache NiFi and FME
- Spark, MapR Data Platform

Open Source ✓
Machine Learning ✓
Public Data ✓

Outcomes

Earthquake

Our team collaborated with the United States Geological Survey to model earthquake impacts in the first two hours of shaking. These estimates help responders distribute resources effectively and help planners mitigate damages during future earthquakes. After the 2018 Anchorage Earthquake, **our impact estimates were delivered to the President of the United States to drive a Presidential Disaster Declaration.**
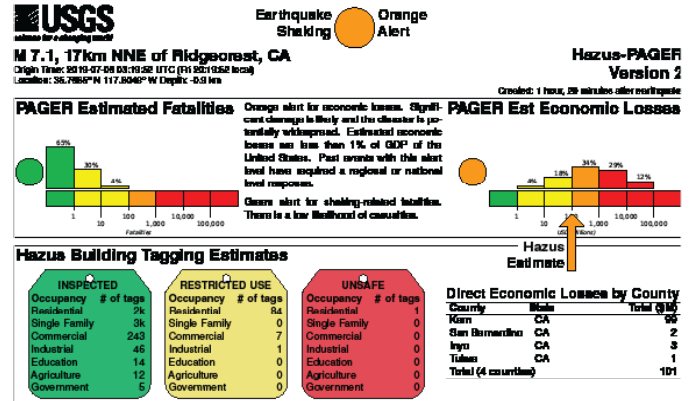

Flood

Niyam helped the New York City Office of Emergency Management calculate the economic risk to flooding at every structure across one of the world's largest cities. The team accomplished this using only free, **open source technology** – a big win for technology transparency in the risk analysis community. Our flood risk assessment tool can be leveraged during real-time flooding to calculate financial risk at **10,000 structures per second.**

Hurricane

Our team works directly with FEMA, the National Hurricane Center, and the Pacific Disaster Center to predict and map impacts from major hurricanes. As Hurricane Dorian approached the U.S. coast along a continually shifting path in September, we used a wind model to **keep decisionmakers informed about predicted dollar losses**, damaged buildings, and people needing shelter.
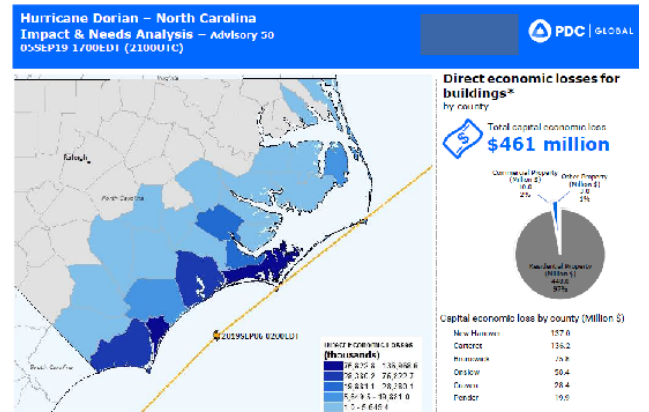
Why Niyam IT?

Niyam IT is a technology team with a mission: empower decision-makers to reduce risk using the best available data and science. Our team leverages a dense network of connections in the risk assessment community to ensure solutions employ the latest data and science from trusted public agencies – then we connect technology with risk management strategies. **We make sure clients can analyze risk to reduce it.**

| Data Science & Analytics | GIS Applications | Agile/DevOps | Security, Cloud, Infrastructure | Trusted Advisor | Open Source Software |