

Science for Society: Building earthquake resilience with Haitian citizens



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Abstract

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The OSMOSE project is a citizen seismology project in Haiti that aims to empower communities and enhance societal resilience to seismic events by creating a network of low-cost Rasberry Shake stations established in the homes of volunteer citizens. OSMOSE not only harnesses scientific data but also fosters community engagement and raises awareness about seismic risk among the general population. By involving citizens directly in the monitoring process, the project seeks to cultivate a culture of preparedness and collective responsibility, bridging the gap between scientific knowledge and local understanding.

Engaging Citizens for Effective Seismic Monitoring and Resilient Society

Educational outreach and participatory activities

Empowering Haitian communities to take proactive measures in response to seismic threats

Safer society



Raspberry Shake station hosts



์≈ 30 RS

installed

Data visualization website: https://ayiti.unice.fr/ayiti-seismes/

ENGAGING CITIZENS IN SEISMIC MEMORY LET'S CREATE A COMMEMORATIVE SEISMIC SIGNAL TOGETHER IN MEMORY OF THE 2010 EARTHQUAKE CREATE A SYMBOLIC SIGNAL Vili-SEISMES

YOUR STATION, YOUR CONTRIBUTION

+**++**+**+**++++++++++++

The Raspberry Shake is a seismometer, a very sensitive device that measures ground vibrations. Each Raspberry Shake in the Ayiti-SEISMES network makes it possible to nonitor seismic activity in the region. By hosting a station in your home, you are contributing to a better understanding of earthquakes in Haiti.

THE SEISMIC SIGNA A seismic signal is a graphical representation of ground vibrations recorded by a seismometer



To commemorate the 2010 earthquake, we invite you to jump just once and energetically next to your station on Friday, January 12, 2024, at precisely 4:53 pm!

Your simultaneous jump will create a unique symbolic seismic signal!

LET'S IMMORTALIZE YOUR SIGNAL The idea is to make this signal a positive symbol -3 that reflects the commitment, the memory and the solidarity of the community. The signals created will then be presented as posters or even on T-shirts.





Coordinated Jump Event: Raspberry Shake hosts across Haiti jumped near their seismometers, generating vibrations recorded by the seismic sensors (A)

FROM LASTQUAKE APP TO WHATSAPP BOT

Sismo

citizens

LastQuake app: Effective, but limited usage in Haiti

WhatsApp Bot: Leveraging Haiti's most popular messaging platform High costs limit further development



- Manual Data Processing: Experts processed these data on the Ayiti-SEISMES platform, allowing the system to interpret them as a localized earthquake (B)
- **Commemorative Earthquake:** The system assigned a fictitious magnitude of 5 to this commemorative event

LastQuake WhatsApp Bot User Guide

Bot Sent Message

IMMERSIVE EARTHQUAKE TRAINING FOR REAL-WORLD PREPAREDNESS

- Seismic Event Simulation: Allows participants to practice actions before, during, and after an earthquake in a safe, controlled environment
- **Realistic Effects:** Includes falling objects and sounds to enhance immersion and make the experience more lifelike.
- Hands-On Learning: Provides a practical way for users to prepare for real-life seismic threats



Scene created by students of the Ecole Superleure a infotronique if

🔻 开 🖌 Earth Quake ((Script)	0 7 i	
Script	EarthQuake	0	
Magnitude	•	3	
Duration	•	3	
Shaking Speed		20	
Random Amount		0.5	
▼ Magnitude Tab		3	
Element 0	3		
= Element 1	5		
= Element 2	6.5	- T	
		+ -	
Duration Tab		3	
= Element 0	3		
= Element 1	15		
= Element 2	30		
		│ + -	
Force By Axis	X 1.04 Y 0	Z 1.05	
Force Over Time			
Force Recenter	Z		
Loop			
Current State			
Player	Main Camera (Audio	Source) 💿	
Cam Shake Data	✿NewCameraShake (Shake Dat ⊙		
Current Magnitude	0		

Game parameters

* * * *

Conclusion

The OSMOSE project demonstrates that low-cost Raspberry Shake stations effectively complement conventional seismic networks, enhancing seismic monitoring coverage in Haiti.

There is a strong demand for earthquake-related information among citizens, coupled with a sense of pride in participating in the scientific project.

Community engagement is crucial not only for data collection but also for fostering a sense of ownership and empowerment.

Meaningful citizen engagement remains challenging in Haiti due to socioeconomic disparities and political instability.

The activities implemented aim to keep Haitian citizens motivated despite difficulties, emphasizing that sustained community engagement is key to the project's longterm success and impact.

