

LIBERAL ARTS

Geolocation of Political Protests in Nicaragua

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In an age where social media is readily accessible for millions to upload videos in an instant, it is more important than ever to confirm the validity of claims in videos by confirming their location and date. Geolocation is the process of verifying these items using environmental features and comparing available data on the location. Primary videos of human rights violations in Masaya, Nicaragua, were obtained via Twitter uploads for analysis. The location of Nicaragua was chosen due to numerous protests between police and citizens over President Daniel Ortega's announcement to cut social security benefits in April of 2018. Twitter was utilized for primary footage as it allows for ease of use in uploading videos documenting human rights abuse and gives information on the publisher of the video. Using Google Earth, specific features such as businesses, traffic markers, et cetera, were identified in the video and searched to verify both the location and date of the upload. Google Earth is a powerful tool in geolocating videos for two main functions: (1) 360-degree street-view functionality and (2) satellite image history, making it easier to analyze environmental changes over time in the area. These techniques were utilized successfully to confirm a riot where citizens and police were fighting outside Universidad Nacional de Ingeniería (UNI) in Masaya and to falsify footage of citizens raiding a church for military weapons in Managua. Using geolocation as a tool to document human rights abuses allows for a crowdsourced method to fight against injustice.

Research advisor Jason Parry writes: "As participants in my fall 2018 seminar on the history of human rights, these students received training in the use of digital tools to conduct their own human rights investigations. What follows are the results of their combined efforts collecting and verifying information about anti-government protests in Nicaragua."



Areas highlighted in red show matching environmental factors from three sources. On top is a picture from a video upload of police forces using force against citizens. (Image retrieved from Ruptly.) On the bottom left, the identified Comedor "El buen sabor" business is shown. (Image retrieved from D. Martinez.) The bottom right panel shows the satellite view of these identified structures from Google Earth.