

**EMERGENCY PREPAREDNESS.** HOMELAND SECURITY & CYBERSECURITY STATE UNIVERSITY OF NEW YORK

### Introduction

The emergence of artificial intelligence (AI) techniques, such as machine learning, deep learning, and natural language processing are becoming a crucial part in each phase of disaster management. These phases are enhanced by AI applications to process large amounts of real-time data from IoT sources and social media enabling decisionmaking. AI has the potential to predict disasters, predict areas of significant impact, and guide response strategies. Several studies have been conducted to develop AI models for predicting natural hazards, aiming to integrate them into the disaster management systems. However, the application of AI to address the social dimensions of disaster phases in identifying the needs for user-oriented decision support systems has received limited attention. Therefore, this study is significant in enhancing disaster management strategies.

## Methodology

|              | PRISMA  | <b>Flow Diagram</b>   |
|--------------|---|---|
| entification | Records Identified<br>(n=943)<br>Web of Science (n=329)<br>PubMed (n=103)<br>IEEE (n=511) |   |
|              |   | Duplicate red   |
|              | Records screened by<br>title and abstract<br>(n=927)                                      | Records exc<br>Not relat<br>Keyw  |
| Screening    |   | Disa<br>Manager<br>Artificial Int<br>Emergency M<br>Abstra<br>include<br>Letter to e        |
| ded          | Full text assessed for<br>eligibility (n=237)<br>Full text articles                       | Records excl<br>Not related t<br>Not related<br>haz<br>Not Al-applic<br>Not related<br>panc |
| nclu         | included in the<br>review (n=73)  |   |

# APPLICATIONS OF ARTIFICIAL INTELLIGENCE (AI) IN DISASTER MANAGEMENT: A SYSTEMATIC REVIEW

Oyeronke Toyin Ogunbayo; Prabin Sharma; Yuan Xiaojun; DeeDee Bennett-Gayle oogunbayo@albany.edu,psharma6@albany.edu,xyuan@albany.edu,<u>dmbennett@albany.edu</u> University at Albany, State University of New York



