Project Title:
Humanitarian Pulse: An AI-Powered Disaster Event Intelligence and Thematic Summarization System

Project Description:
During major disasters, situational information about the impacts is distributed across multiple platforms and organizations. Reports vary in format, scope, and terminology. Decision-makers often face challenges related to information overload, fragmented situational awareness, difficulty comparing cross-organizational reports, time constraints for synthesis.

We aim to develop **"Humanitarian Pulse",** a system designed to automatically collect, organize, and summarize information about natural disasters from trusted, predefined sources, including humanitarian organizations, government agencies, and situation reports. The system aims to transform fragmented, multi-source disaster information into structured, event-centric, and theme-specific intelligence products that can support humanitarian actors in planning response and recovery operations.

System Objectives

- Automated Data Collection
    - Gather disaster-related information from a predefined list of trusted sources (e.g., humanitarian organizations, situation reports, official updates).
    - Support multiple formats (web pages, PDFs, bulletins).
- Event-Centric Organization
    - Identify and cluster documents related to the same disaster event (e.g., "Flooding in Paris – May 2026").
    - Link all event-specific documents into a unified database entry.
- Thematic LLM-Based Summarization
    - For each event, generate structured summaries across multiple themes, such as:
    - Human Impact (casualties, displacement, affected population)
    - Infrastructure Impact (roads, bridges, power, hospitals)
    - Humanitarian Response (deployed organizations and roles)
    - Geographic Scope
    - Unmet Needs and Gaps
- Structured Database Storage
    - Store raw documents, metadata, extracted entities, and thematic summaries.
    - Enable querying and comparison across events.

Project Type: Engineering, Development
Internship Batch: Batch 1: May 10 to July 9, suitable for Education City students, i.e., CMUQ, TAMUQ and HBKU students
Duties/Activities: as listed in the system objective section
Required Skills: Python programming knowledge
Preferred Intern Academic Level: Any

Learning Opportunities: Optimized LLM inference, RAG based systems, Database manipulation, Data wrangling, Prompt Engineering, Agentic frameworks.
Expected Team Size: 1 or 2

Mentors:

Ahmed El Feikh	email: azguir@hbku.edu.qa
Moamin Ibrahim	email: moibrahim@hbku.edu.qa
Ferda Ofli	email: fofli@hbku.edu.qa
Muhammad Imran	email: mimran@hbku.edu.qa