



The Lakshmi Mittal and Family
SOUTH ASIA INSTITUTE
HARVARD UNIVERSITY



Student Opportunities

Only open to Harvard students. Interested students must send a resume, a work sample, and a cover letter to msaicclimate@gmail.com. Please indicate the project and position you are interested in as well as your availability during the fall and spring semesters, and J term.

CLIMATEVERSE climateverse.net

Developer (Web Application)

As a Web Developer on the Climateverse project, you'll play a pivotal role in the continuous evolution of the Climateverse platform. Beyond just shaping its initial design, your expertise will be crucial for regular maintenance, troubleshooting any challenges that arise, and spearheading enhancements to ensure optimal performance and user experience. You will be engaged in the following activities:

- **Web Development & Deployment:** Design and implement an updated version of our web application, streamlining the user interface and experience. You'll also spearhead the deployment strategies, ensuring the application is both robust and user-friendly.
- **Climateverse Chatbot Enhancement:** Tap into the realm of Generative AI and LLM resources, building in Python to refine our chatbot functionalities. This enhancement is aimed at facilitating swift data queries and enriching user interactions.
- **Climateverse Repository Maintenance:** Take charge of overseeing the maintenance of the Dataverse instance hosted on AWS. Your role involves ensuring data integrity, consistency, and availability. This includes managing and optimizing databases, efficiently handling cloud resources, and supervising backend services to guarantee seamless operation and high reliability.

Data Engineer/Data Scientist

As a data enthusiast, you'll be at the heart of shaping the data landscape for the Climateverse platform in South Asia. Beyond just framing the essential data structures and algorithms, you'll immerse yourself in data exploration, meticulously build data pipelines, validate data accuracy, and authenticate the origins of our datasets. Your role will be multifaceted, touching on various aspects of the data lifecycle.

- **Dataset Tagging:** Craft a detailed index of both international and domestic datasets vital for research and policymaking in India and Bangladesh. Assess parameters such as data provenance, accessibility, reliability, security, and more. Unearth the challenges in data accessibility and strategize solutions.

- **ETL Mastery:** Architect and implement efficient Data Pipelines to extract, transform, and load the chosen datasets, ensuring they're ready for analysis and action.
- **Dataset Maintenance:** Champion the regular maintenance, updates, and general upkeep of the datasets within the repository, ensuring they remain relevant and reliable.
- **Quality Assurance:** Carry out periodic quality evaluations of datasets and pipelines, ensuring accuracy, consistency, and reliability.
- **Research & Engagement:** Periodically delve into research, crystallizing your insights and findings into articles that enlighten the community and bolster our project's reach.

CRISISREADY

crisisready.io

Technical Product Architect


About Readmapper: Developed by CrisisReady, Readmapper aims to bolster decision-making during disasters by harnessing diverse, cutting-edge data streams from the climate and public health domains. This revolutionary tool emerged from a three-year collaboration between the CrisisReady team and a mosaic of stakeholders – spanning public health and response agencies to hospitals, health systems, and health officials across the globe. At its core, Readmapper fuses data on community demographics, vulnerabilities, infrastructure, and mobility to seamlessly track the dynamic medical needs of populations, especially as they evacuate or relocate during crises.

Role Overview: As a Technical Product Architect, you'll be diving deep into the nexus of geospatial data and product development, contributing significantly to the evolution of Readmapper. Your responsibilities will include:

- **Geospatial Data Exploration:** Dive into the realm of geospatial datasets, specifically focusing on international disasters. Your role will involve thorough research, exploration, and validation of these datasets, ensuring they are both relevant and reliable.
- **API & Script Development:** Architect and implement APIs for various environmental layers, along with crafting scripts that facilitate seamless sourcing and integration of datasets within the Readmapper tool.
- **Tool Performance Enhancement:** Delve into the mechanics of Readmapper, optimizing its performance and reactivity. Your efforts will ensure that the tool remains swift and responsive, especially during times of pressing demand.

Ongoing Maintenance: Alongside the aforementioned tasks, you'll be involved in the continuous upkeep of the tool, ensuring its smooth operation, updating datasets, and rectifying any issues that might arise.

GENERAL PURPOSE APPLICATION

 Our work on Climateverse, Mapping Heat in Microenvironments, and other data-focused projects is just beginning. We foresee a plethora of opportunities, each with the potential to usher in transformative change. Potential Avenues for Collaboration:

- **Stakeholder Engagement and Advocacy:** Dive deep with stakeholders across sectors to unravel challenges and unearth opportunities in domains of climate science, natural disasters, public health and technology. Partner with thought leaders and researchers for specialized training initiatives.
- **Interdisciplinary Research:** Marry the realms of technology, health and climate science to decode the symbiotic relationship between environmental shifts and public health.
- **Survey Design:** Methodically craft and deploy surveys to gather grassroots-level insights on climate, built environment and health. Enhance modes of primary data collection in low resource settings.