Interim Report

1. Definition of the problem

The southern U.S. states, including Texas, Florida, and Louisiana, are increasingly susceptible to flooding due to climate change, hurricanes, and low elevation. Extreme weather events are becoming more frequent, necessitating advanced technologies for accurate flood prediction and prevention. This project aims to explore the application of artificial intelligence (AI) to solving the specific challenges associated with flooding in these states.

2. Computational Solution Plan

Our computational solution involves leveraging AI, particularly machine learning algorithms based on neural networks, to analyze complex data patterns for flood prediction. Additionally, we propose exploring the glacier-freezing strategy as a means to mitigate flooding risks. The integration of AI into the technology for this project is a key aspect to enhance its effectiveness.

3. Progress

Research continues to be focused on the potential of AI in predicting floods. Studies have shown that machine learning, especially neural network-based algorithms, holds promise in deciphering flooding data patterns. We have also begun reviewing the glacier-freezing strategy, considering its environmental impact and researching the latest cryogenic technologies. We are also exploring coding platforms and other software programs

4. Expected Results

We anticipate that the integration of AI into flood prediction models will improve accuracy, providing timely warnings and aiding in preventive measures. The glacier-freezing strategy, when refined through environmental considerations and advanced cryogenic technologies, is expected to contribute to flood prevention warnings, particularly in states vulnerable to global warming-induced flooding.

5. Citations

IPCC Special Report on the Ocean and Cryosphere in a Changing Climate.
"Artificial Intelligence for Environmental Science" - National Center for Atmospheric Research.
"Machine Learning Approaches for Flood Prediction and Susceptibility Mapping" - Journal of Hydrology.
"Glacial Geoengineering: The Key to Slowing Sea Level Rise" - Earth and Space Science News.

"Climate Change and Coastal Flooding Impacts on Louisiana Highways" - Louisiana Transportation Research Center.

6. Future Steps

- Develop a plan for integrating AI into the glacier-freezing strategy.
- Develop a model and or interactive map
- Explore potential collaborations with multidisciplinary experts to address unforeseen challenges and enhance project feasibility, potentially with a contact from University of New Mexico.

The ultimate goal is to develop an innovative and sustainable solution that utilizes AI and cutting-edge cryogenic technologies to predict and prevent flooding, ultimately saving lives and mitigating the impacts of climate change on vulnerable regions.