

Project Management Plan

Background:

- MITRE is a nonprofit organization based in Massachusetts and Virginia that mainly manages federally funded research that supports US government agencies. The project will be data-driven and will consist of modeling and analysis that will be used to provide information and predictions on the crop boots well, considering climate change and how it affects the food supply chain and crop production. Overall, the purpose is to create an agent-based model to predict the effects of climate change on pro production and the food supply chain.

Project Overview:

- “The purpose of this research is to create an agent-based model to predict the effect climate change has on crop production and the food supply chain.”

Project Goals:

- Is it possible to create an agent-based model to assess how climate change will affect agricultural production and its supply chain?
- Can we pinpoint the precipitation, temperature, and other climate change-related event factors that are most reliable predictors of crop yields?
- Can the model be applied to diverse environments and crop types?

Potential Roadblocks and Barriers to Success:

- As of today, we have yet to meet with our sponsor MITRE. Our first meeting will take place on January 30th at 1:30pm. Given that no information in the document is provided, there is no specific roadblock or potential barrier to success. However, this it's an important thing to mention to our sponsors so we can be aware if there are any barriers to success

Preferred Methodology:

- To successfully predict crop builds, the input in the data sets should consist of harvested crops for an aerial geological joke location, weather patterns, and summary data for specific areas. Overall, the ideal methodology would be an agent-based model

Data Requirements and Availability:

- The group will collect the data and conduct a detailed landscape study of the datasets. However, it's important to mention that MITRE has provided data sources for the data collection from the national oceanic and atmospheric administration and the USDA. The group will focus on categorizing the potential climate change events known as my topic and including wildfire, floating hurricanes, and other catastrophic events. Additionally, the group may analyze temperature changes over time.

- Data Sources Provided:
https://www.nass.usda.gov/Charts_and_Maps/Field_Crops/cornprod.php
https://www.nass.usda.gov/Statistics_by_Subject/index.php?sector=CROPS
https://www.nass.usda.gov/Research_and_Science/Cropland/Release/index.php
<https://www.noaa.gov/education/resource-collections/data/historical>
<https://www.climate.gov/maps-data/climate-data-primer>

Analytics Requirements:

- MITRE's Vision with regard to the type of analytics to solve the problem it's for machine learning to more focused on agent-based modeling

Preferred Tooling:

- The team will provide the project sponsor with a thorough report emphasizing the data collection, Detailed Landscape Study of Datasets, visualizations, and the code. The project sponsor did not mention whether they proffered R or Python, so we will use the one we think is best for each section. If the sponsor were to request specific software for a particular task, we would pivot and use that system.

Project Schedule:

Task name	Assignee	Due date	Priority	
▼ Doing				
▶ ✓ Assignment 2 Part 2 1 🗨	VM Victor Mesalles	Today	High	
▶ ✓ Assignment 2 Part 1 1 🗨	MR Melissa Rwehumbiza	Today	High	
✓ Create git repo	MS Max Savasta	Jan 25 – Today	High	
Add task...				
▼ To do				
▶ ✓ First client meeting 4 🗨	MR Melissa Rwehumbiza	Tomorrow	High	
✓ Data Collection 1 🗨	VM Victor Mesalles	Today – Feb 12	Medium	
✓ Detailed Landscape Study of Datasets 1 🗨	VM Victor Mesalles	Feb 13 – 27	High	
✓ Data Distribution Analysis 1 🗨	MR Melissa Rwehumbiza	Mar 20	High	
✓ Develop ML Model 1 🗨	MS Max Savasta	Apr 10	High	
✓ Generate Report 1 🗨	MR Melissa Rwehumbiza	May 1	High	
Add task...				