Puja Roy 2/3/22

CET 4900 - OL60

Internship Journal Entry #2

Abstract

The New York Urban Hydro-Meteorological Testbed (NY-uHMT) data benefits people from various communities in New York City to observe and interpret local weather and predict climate changes throughout time. For my research, I am developing a communication tool that displays weather and climate data in NYC maps. The New York Urban Hydro-Meteorological Testbed (NY-uHMT) is a weather network that investigates climate change in the New York City area. It is composed of 19 weather stations that collect parameters for temperature, precipitation, humidity, and soil moisture. The primary goal of this project is to program in Python to build a communication tool that automates the retrieval of weather stations & forecasts climate changes/natural hazards in NYC maps utilizing NY-uHMT data. The NY-uHMT data are TXT files delivered to the CUNY CREST Data Server for data analysis regarding the improvement of weather stations in NYC. This research project aims to develop a high-resolution mapping of ground and atmospheric conditions and it will benefit NOAA's mission in interpreting and predicting changes in climate, weather, the coast, and how natural hazards occur.

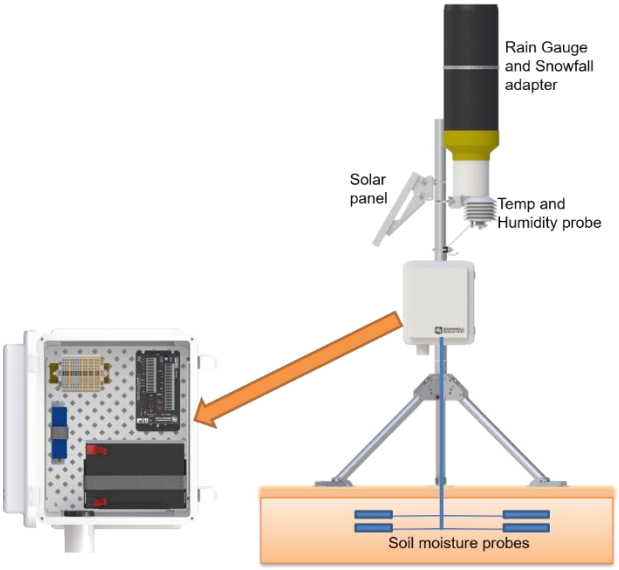

Figure 1 – NY-uHMT Weather Station

(Photo Credit: NOAA CESSRST)

Figure 2 – uHMT Weather Stations at Queens Botanical Garden, Brooklyn Public Library – Brownsville Branch and Polo Grounds at NYCHA Property

(Photo Credit: NOAA CESSRST)

uHMT Weather App and Communication Tool

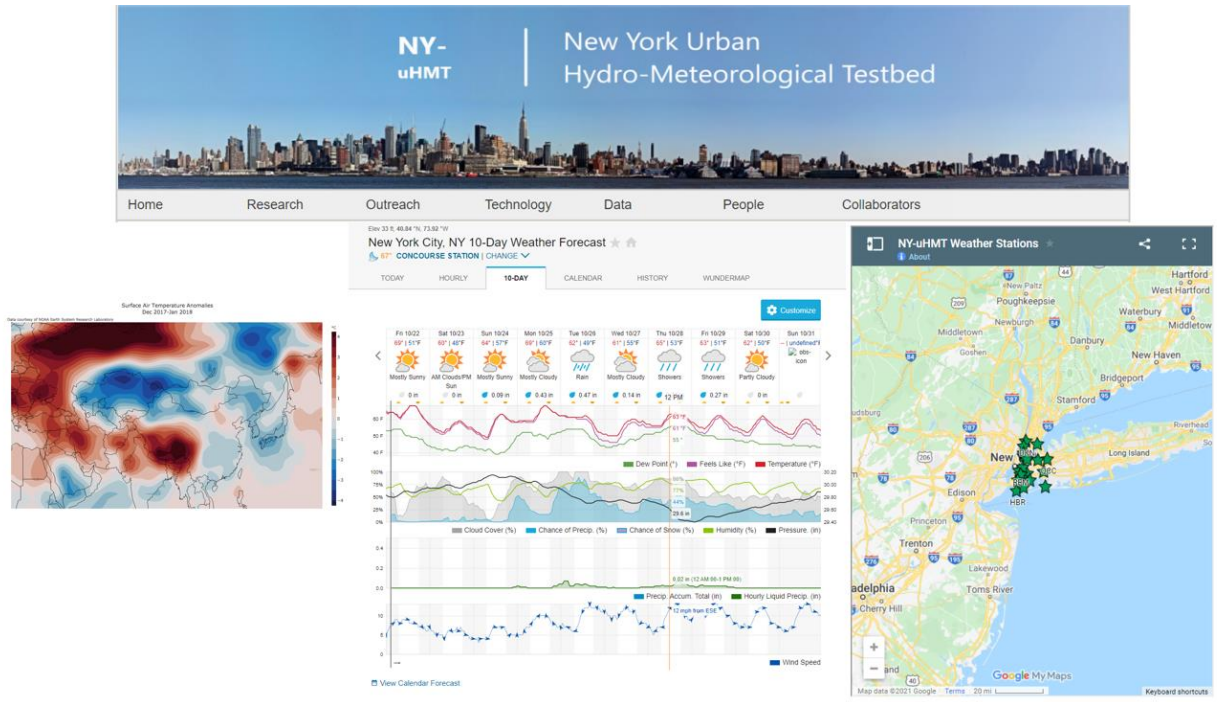

Figure 3 – Web Design of the Weather App in the uHMT Website

The main objective of my internship is to build a Weather App which will be utilized as a communication tool to forecast and analyze climate changes. Since this a large project and has many elements associated such as remote sensing, data science, and Geographical Information Systems (GIS), I first started working on brainstorming ideas of how to display the Weather App in the uHMT website. As you can see above in Fig 3, I designed the UX/UI design of the Weather App to provide a glimpse of what the Weather App will eventually look like. My Mentor decided that the best way to develop the Weather App would be to leverage the Weather Underground API. Fig 4 displays a story map that I created in ArcGIS StoryMaps software to plan which areas of New York the weather station will be used in to predict weather. Most importantly, the purpose of this StoryMap is to author and share maps and technical content related to engineering research.

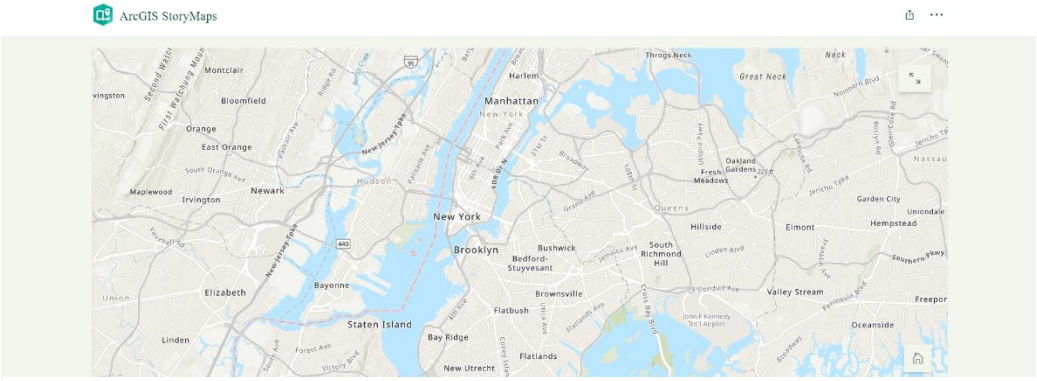

Figure 4 – My StoryMap in ArcGIS web-based Application displaying areas of New York City