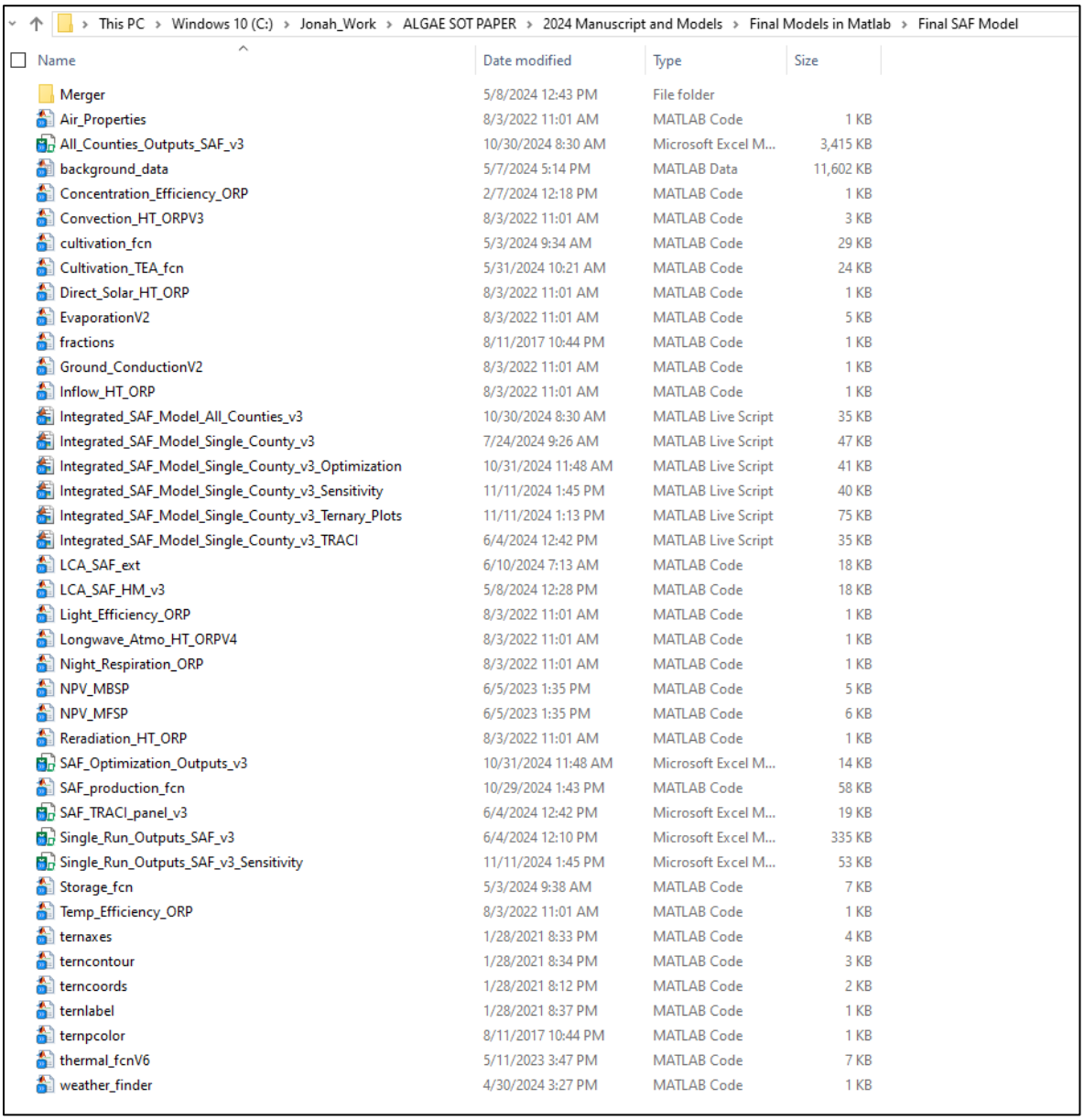
To use the CSU_algae_biofuels_model (HEFA model) you must put each of the following files into a single folder. This folder can be anywhere on your computer, and you can name it whatever you want to, but the code requires that all files are in the same folder. Also, **you should have separate folders for the HTL and HEFA models.**

Required Files for the HEFA model:

- All files contained in the HEFA branch of the data repository found through this link (GitHub): https://github.com/jonahgreene01/CSU_algae_fuels_model/tree/HEFA
- The "Merger" folder which contains all weather station data found through this link (Google Drive): https://drive.google.com/drive/folders/15i6FB_46SpMV6J7lG36U82KxgUVbyXGz?usp=sharing

Once everything has been consolidated the final folder should look like this:



Once you have placed all required files into a single model folder (that looks like the picture on the previous page) you can run the model using one of the user interface live scripts described below:

1. **Integrated_SAF_Model_Single_County_v3.mlx**: Use this code to get comprehensive TEA and LCA results for a single county in the contiguous US or Hawaii. All inputs can be configured within the live script. Also, the user can view results through the live script or by printing to the Excel sheet: **Single_Run_Outputs_SAF_v3.xlsm**

2. **Integrated_SAF_Model_Single_County_v3_Optimization.mlx**: Use this code to run the optimization algorithm for a single county in the contiguous US or Hawaii. All inputs can be configured within the live script. Also, the user can view results through the live script or by printing to the Excel sheet: **SAF_Optimization_Outputs_v3.xlsm**

3. **Integrated_SAF_Model_Single_County_v3_Sensitivity.mlx**: Use this code to run the sensitivity analysis for a single county in the contiguous US or Hawaii. All inputs can be configured within the live script. Within the live script, results can be printed to the Excel sheet: **Single_Run_Outputs_SAF_v3_Sensitivity.xlsm**

4. **Integrated_SAF_Model_Single_County_v3_Ternary_Plots.mlx**: Use this code to run the compositional analysis for a single county in the contiguous US or Hawaii. All inputs can be configured within the live script. The code generates ternary diagrams which can be copied and pasted out of Matlab. This code does not print to Excel.

5. **Integrated_SAF_Model_Single_County_v3_TRACI.mlx**: Use this code to generate environmental impacts from the Tool for the Reduction of Chemical and Other Environmental Impacts (TRACI) methodology for 5 case study locations. The user can print outputs to the Excel sheet: **SAF_TRACI_panel_v3.xlsm**

6. **Integrated_SAF_Model_All_Counties_v3.mlx**: Use this code to run the model in each of the 5,626 locations included in the weather grid within the “Merger” file. This will generate an output matrix with key LCA and TEA results metrics that is saved to the Excel file: **All_Counties_Outputs_SAF_v3.xlsm**