CS Master's Compass: The Grad School Comparison Tool

Yangyong Deng (yangyond), Haochen He (hhe3),
Meriem Fouad (mfouad), Ryan Wang (ziruiw2)

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CS Master's Compass is an interactive graduate school comparison tool. Our application empowers prospective students to make informed decisions about their Computer Science Graduate education.

Here, at CS Master's Compass, we know that choosing the right graduate school can be a daunting prospect. So, we have built an application to help you compare Master's program in Computer Science. Learn how to use our tool below.

1 Installation

To use our interactive comparison tool, follow these steps:

- Access our source code by downloading the folder: B1_Group8
- Install required Python modules:
  In addition to the modules that Anaconda provides, you will need to install other modules. The additional packages are outlined in 'requirements.txt' file. To install them, firt navigate to the directory where the folder is stored, then run the 'pip install' command. The code below illustrates how to do this (please note that you need to update dir to your own directory)

```
cd dir
pip install -r requirements.txt
```

2 Running the Program

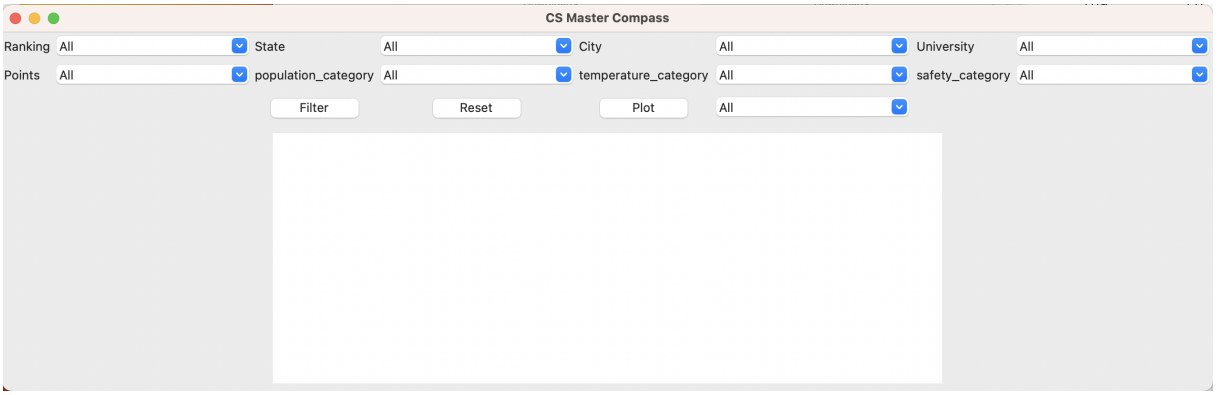
Our main file is cs_master_compass.py. We recommend running the cs_master_compass.py file on either:

- PyCharm; or
- On the terminal directly by running:

```
python cs_master_compass.py
```

CAUTION: We do NOT recommend running it on Spyder. Running it on Spyder might lead to the interactive map not being displayed properly. For best results, use Pycharm or the terminal.

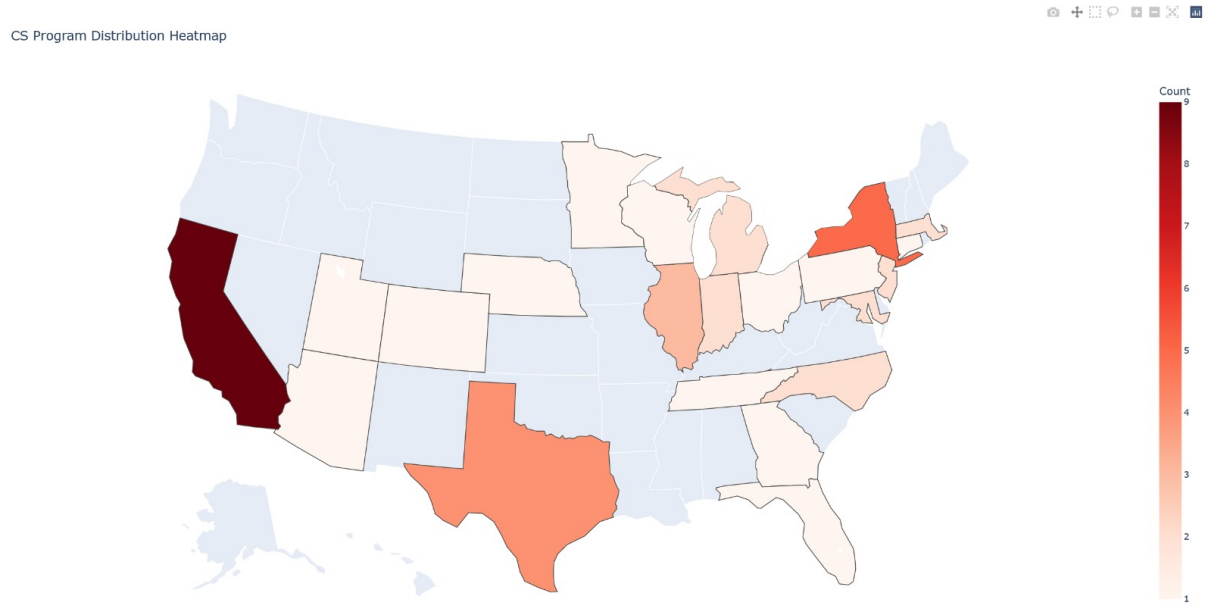
A GUI window should pop up. The window should look like this:



From here, you have multiple ways through which you can interact with the the CS Master Compass tool.

2.1 Plot an Interactive Map

Where are the top CS Masters program located? Our choropleth map of the U.S. shows you the count of CS programs for each state that made it to the top 50 list. You can hover over each state and see the number of top-50 masters program in that state. To display the map, press plot directly; or choose "map" in the drop-down menu on the 3rd row, then press plot. A browser will pop-up with the map. The window should look like this:



You can hover on the map to see the count of universities in each state that made it to the top 50 CS MS programs. For example, if we hover on NY state, we can see that there are 5 universities.

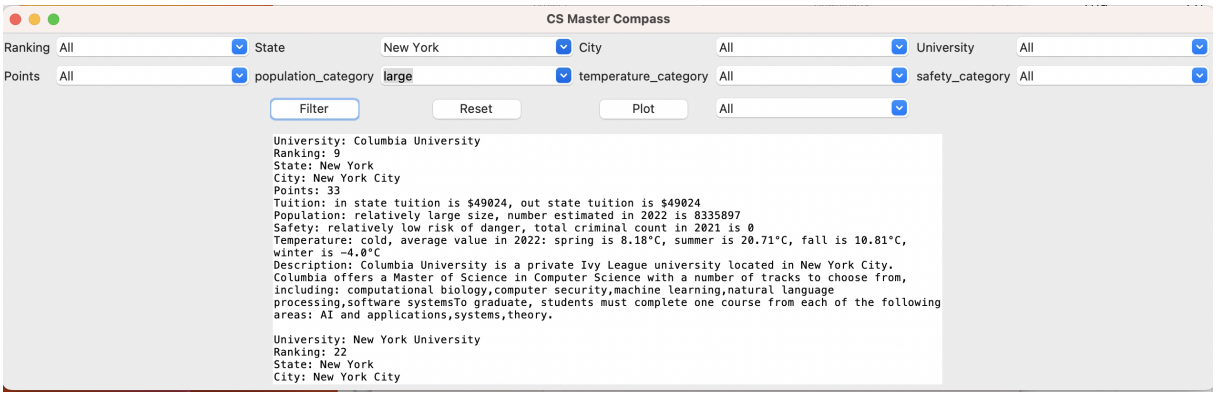
2.2 Choose a program based on your criteria

Our filtering search engine allows you to pick from any of the following criteria and returns CS programs that meet your criteria:

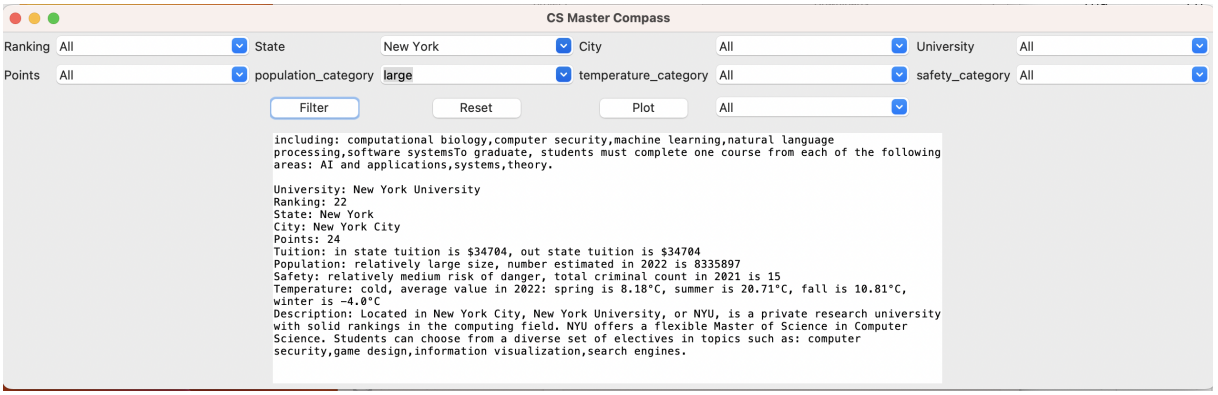
- Ranking (Top 10, Top 20, Top 30 etc..)
- State
- City
- University
- Points (These are the points associated with the ranking : the higher the the points the higher the ranking)
- Population Category: Small, Medium, Large
- Temperature: Cold, Medium, Hot
- Safety: Medium, Low, High

You can filter to any combination you would like and then press "Filter". Note: if you had a prior selection, please click on "Reset" first.

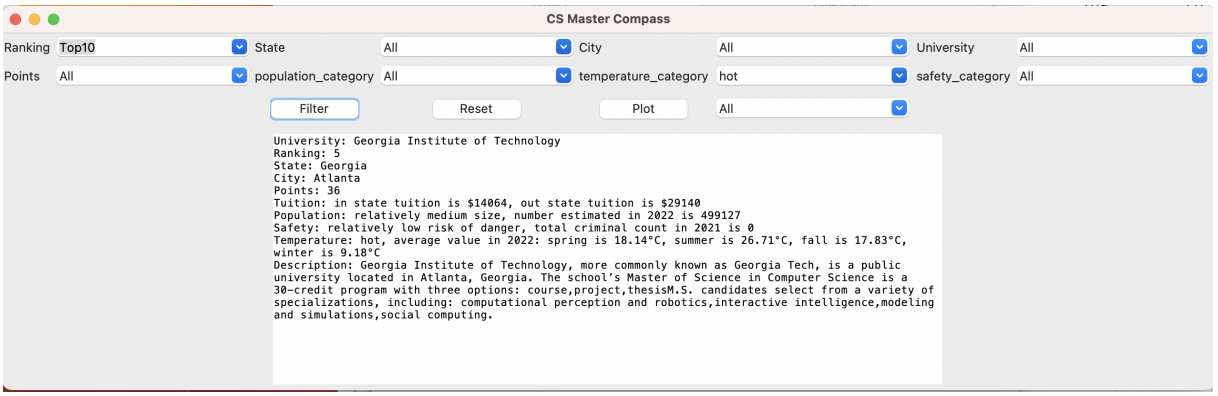
For example if I was interested in the CS Masters programs in New York State only and with in an area with a large population, I could filter to New York State and to a large population and I would get the following 2 universities as results:



You can also scroll down to see further results:

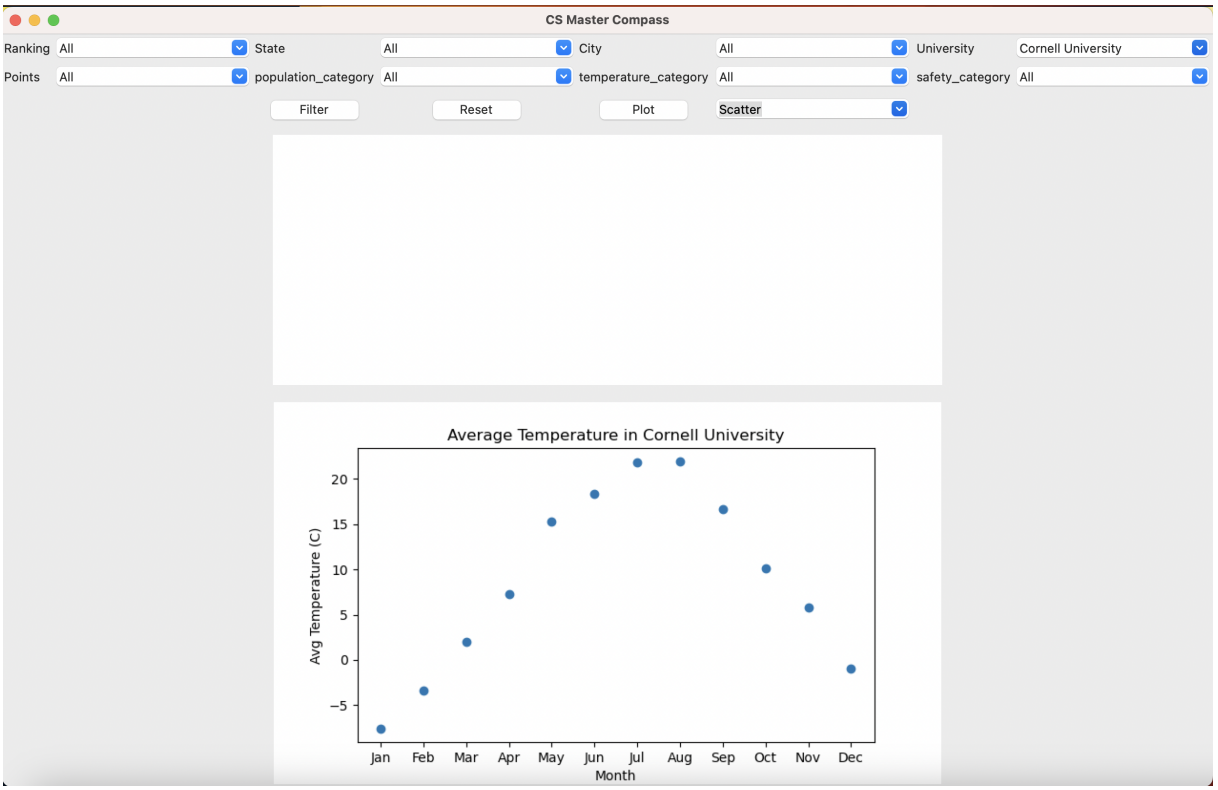


Similarly, if I was interested in universities located in hot climates and that are part of the Top 10 programs, I would get the following window:

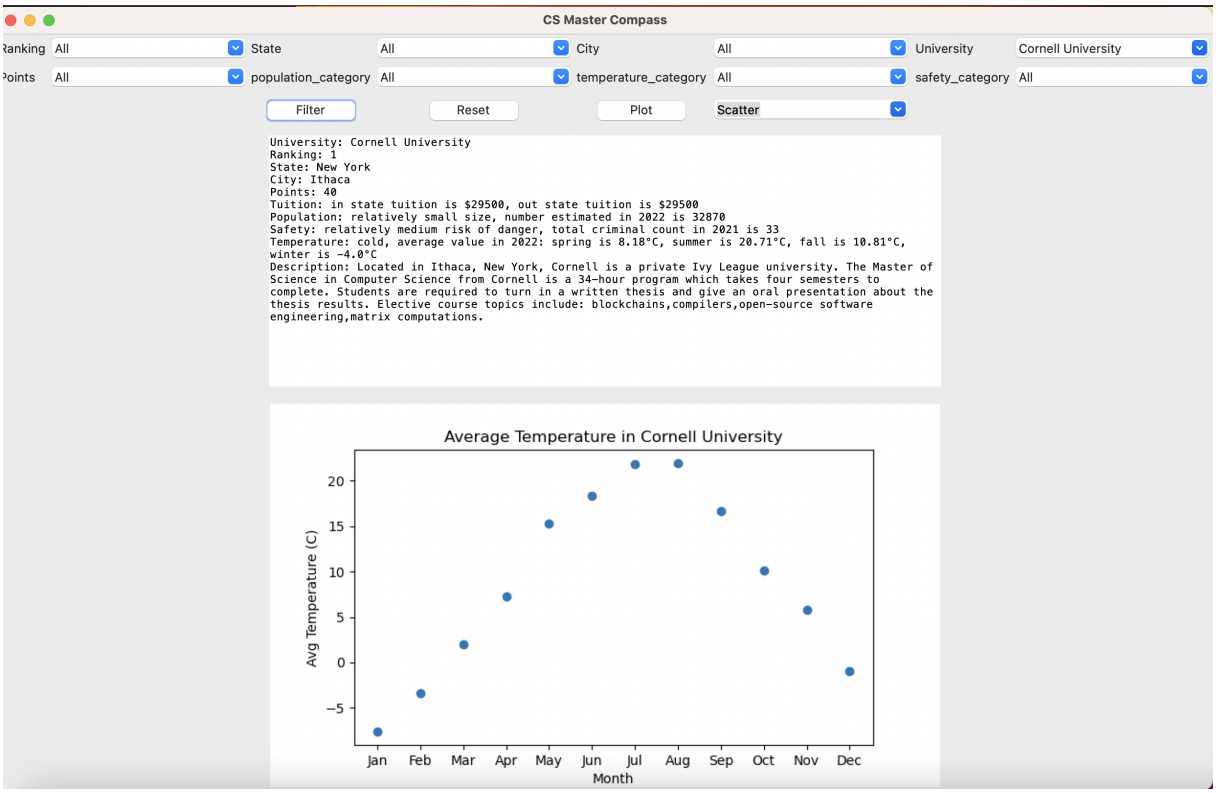


2.3 Visualize weather scatterplot

In addition to the map and text-based results, the user can also visualize the monthly average temperature in each university of their choosing. To do so, first click on "Reset", then choose a "University", then navigate to the drop-down menu on the third row and choose "scatterplot". This should display a scatterplot of the average temperatures for that university. For example, for Cornell we get the following window:



You can also display both the scatterplot and the description of the university by clicking on "Filter" in addition to "scatterplot". You should get the following results



3 Video

For an interactive walkthrough of our project being run, please watch this video linked here (if the hyperlink does not open, copy paste this link in your browser: https://youtu.be/J6m6J-3PfA0)

Thank You!