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2/1/23

ACM Research Answer

Kaggle’s Star Dataset has a wealth of information on your screen. It has over two hundred stars, with information relating to each of these stars. The first thing I wondered about is how temperature affect anything at all. So I decided to find correlations between temperature, radius, absolute magnitude, and luminosity.

I first questioned how temperature and radius are correlated. I noticed on my first glance at the data is that the stars with the highest temperatures has the largest radius. But after looking further, I noticed that some stars with the biggest temperature have a smaller radius than other stars. For example, there is a star on line 13 of the CSV file that is red and a star type of 1 with a temperature and radius of 3129K and 0.3761 R/Ro respectively. But another star on line 22 that is blue-white and is a star type of 2 has a temperature and radius of 25000K and 0.0084 R/Ro respectively. I sort of doubt temperature and radius are correlated, but I must see if my hypothesis is correct.

So I grab all of the stars’ temperatures and their radius and put them in a correlation using Excel’s Correlation() equation. Correlation can result in a number between by -1 or 1, which either mean that has a perfect, negative correlation or a perfect, positive correlation respectively. Getting the results, the correlation between the temperature and radius of the stars has a correlation of 0.064216; in other words, it has a 6.42% positive correlation. So we can rule out that temperature and radius are related.

But I want to figure out how temperature is correlated to what. So I decided to create a correlation between temperature and absolute magnitude. I thought that there would be a positive correlation between the two of them. After inputting the data into the correlation formula, it outputted a negative correlation of -0.42026, or a 42.03% negative correlation. It is a bit closer to -1, but not enough.

Finally, I tried to create a correlation between temperature and luminosity. I believed that there definitely would be a correlation between the two. In my mind, I thought that like stoves, the higher the temperature, the brighter the light source. So after correlating it, I got an positive correlation of 0.393404, or a 39.34% positive correlation.

After I collected the correlated data, I still wonder if temperature was affected by any of these factors. I believe there should be a strong correlation between these factors. But apparently, there is not. I may have did something incorrect while calculating these numbers or I missed something. But alas, I can definitely say that there is no strong correlation between temperature, radius, absolute magnitude, or luminosity.

Graphical user interface, text, application, email

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