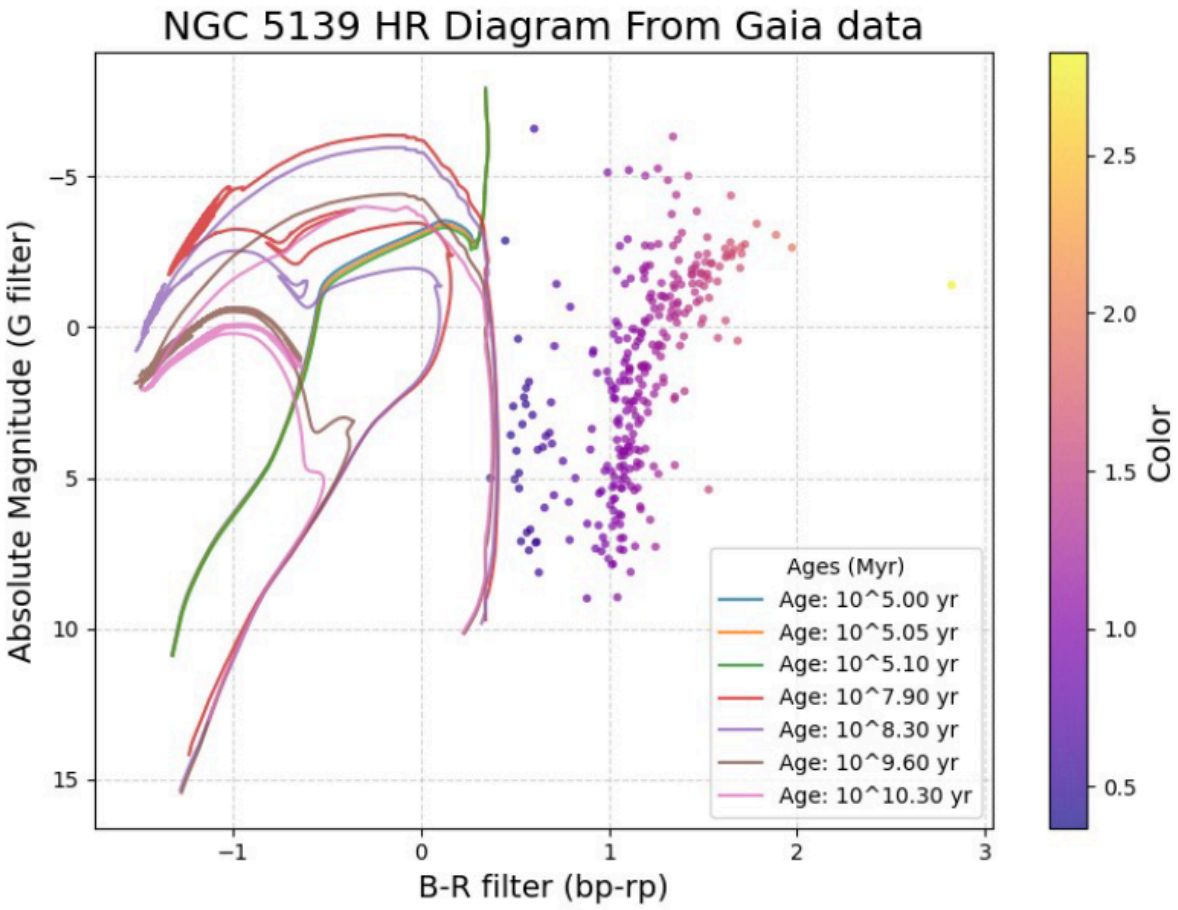

This is the final result of my Color Magnitude Diagram overlapped with the MIST data value. As you can see here, the data is not matching at all which to me is very bizarre. I cannot pinpoint why this is the case, but I can see a few points I can improve. First of all, the number of samples I use to plot the initial HR diagram is not large. I picked the star cluster NGC 5139, which is supposed to be the largest star cluster within our Milky Way. However, it seems like there are a lot of null values in the Gaia data and therefore the final data is not a lot (initially, there are 2000 samples). I also think I have done something wrong with the ages here, as I might have to log10 them or something. Despite the bp-rp values of the 2 graphs being misaligned terribly, I think the 2 models represent the magnitude values well as you can see the 2 models fit quite well in terms of their y-axis. At least I can see the main sequence, the giants, and the white dwarfs separated from each other in this structure quite clearly. I'm just not sure what happened with the x-axis. As far as what I have learned from this model, I can at least see that the evolution of stars in different ages still fit very well with the HR diagram as their general shape and y-axis quite match with each other. That is pretty fascinating, to say the least, and I'm sure it will be even more impressive if I get them right.