INFSCI 1520 – Information Visualization

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Demographics of Billionaires in 2022

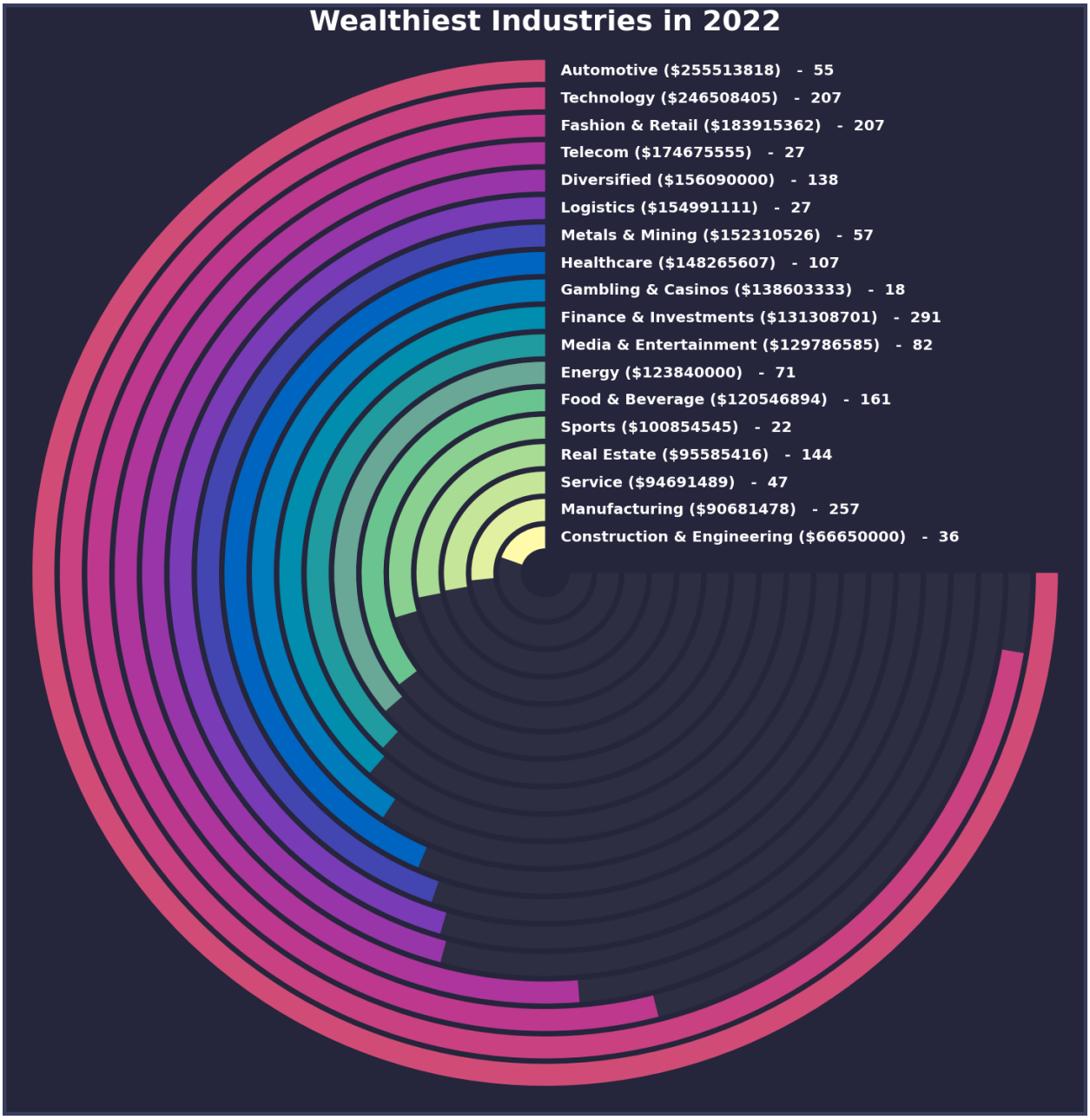


Figure 1: Average Income by Industry

Figure 2: Average Income by Continent

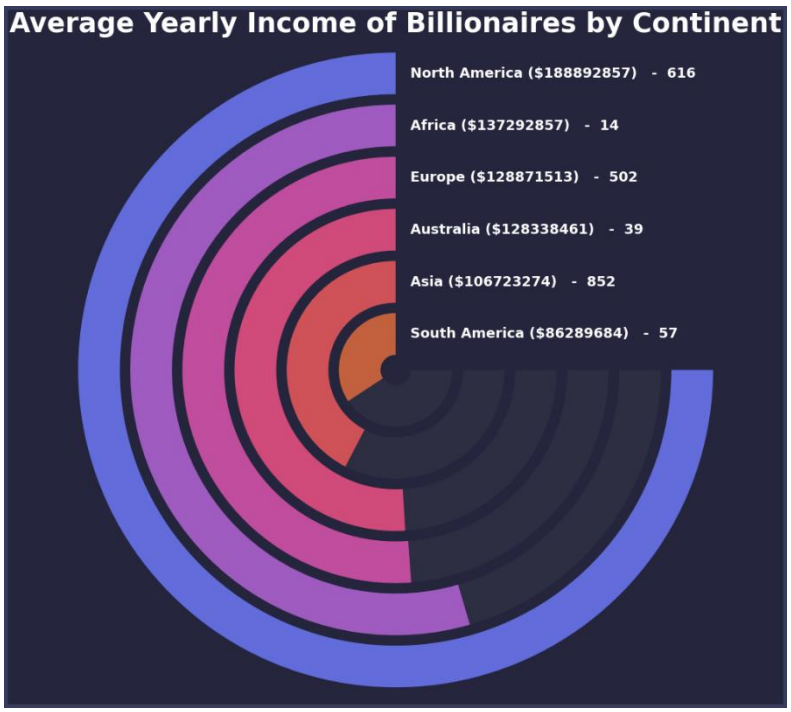
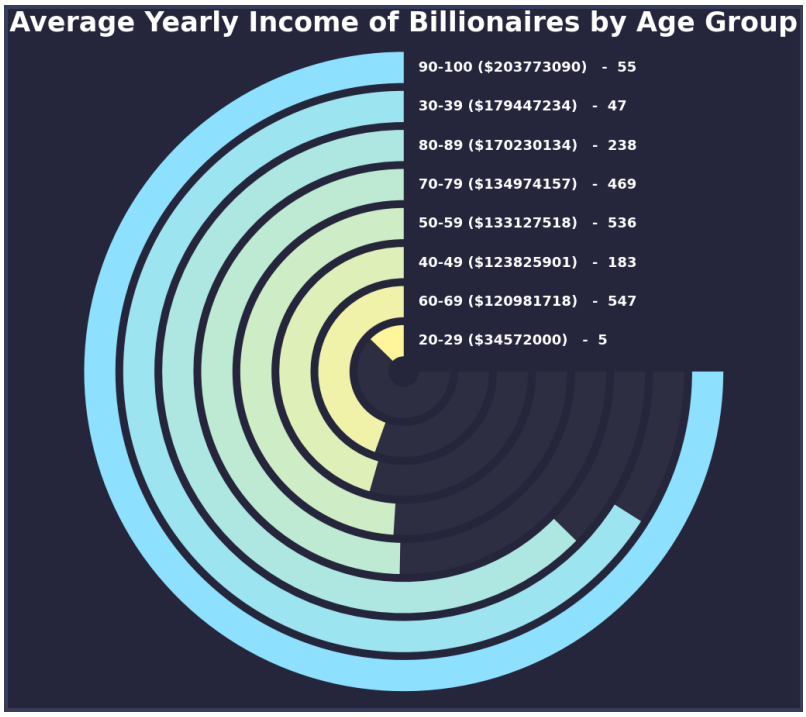


Figure 3: Average Income by Age



Legend:

- The legend of the main figure is formatted as 'Industry ($ Average Annual Income per Billionaire) - # of Billionaires in the Industry'.
- The legends of the other two figures are the same however apply to continent and age group respectively.
- The colors of the graphs are only for aesthetics.
- The graphs are formatted as radial bar graphs, with the max amount on the graph being set as the largest average amount in the datasets.
- The lengths of each radial bar correlates to the average annual income per billionaire (as seen by starting with a $ symbol).

Findings:

- The automotive, technology, fashion and retail industry have the most concentration of money while construction and engineering, manufacturing, and service have the least.
- The most billionaires work in the finance and investment industry, which can be an indicator of ease to make money by working in that industry.
- The least number of billionaires work in the gambling and casino industry.
- The average billionaire that works in North America, Africa, or Europe made the most in 2022, while South American billionaires made the least on average.

- Asia has the most billionaires 852 with (but not the most money per billionaire) and can indicate that it is easier to become a billionaire in Asia in comparison to Africa, which has only 14 billionaires, but they all make a very high average per year.
- The age group that made the most on average in 2022 was people over 90, in comparison the age group that made the least on average in 2022 was people 29 and under.
- The automotive and technology industries have a significantly larger concentration of wealth, North America has a significantly larger concentration, and billionaires 29 and under make less significantly in comparison to other age groups.

Data and Methodology:

- I obtained the data from a Kaggle dataset called 'Global Billionaire Wealth and Sources'.
- I cleaned up my data by removing unnecessary columns, deleting repeats, and filtering the time to only 2022.
- The original data only contained countries, so I manually added them to a continent column using a defined function.
- Using the original data, I made three separate data frames containing the main demographic, the overall income, how many people are in the demographic, and the average each person made in the demographic.
- To find the average, I divided the overall income of each demographic by how many people were in the demographic.
- I used mathplotlib, pandas, and numpy to create my visualizations and aid in cleaning up the data.
- I found the base code for radial graphs from https://towardsdatascience.com/create-eye-catching-radial-bar-charts-with-matplotlib-fd03ff732048.
- I added how many people are in each demographic to help understand the data better in the figures.

Significance:

The purpose of these figures is to highlight which demographics made the most money on average in 2022. The visualizations can show the gaps between demographics which can be used to find the richest demographics. The main figure can show what industries make the most money on average, as well as what industries have the most billionaires or the least billionaires. The continent figure can show what regions have the most concentration of wealth. The figures can help to understand why certain demographics make more than others.

Sources:

- Data - https://www.kaggle.com/datasets/salimwid/global-billionaire-wealth-and-sources-2002-2023?resource=download.

- Inspiration - McDonald, Andy. "Create Eye-Catching Radial Bar Charts with Matplotlib." *Medium*, Towards Data Science, 7 Mar. 2023, https://towardsdatascience.com/create-eye-catching-radial-bar-charts-with-matplotlib-fd03ff732048.
- Github Link - https://github.com/jos259/INFSCI-1520-Final-Project.git.