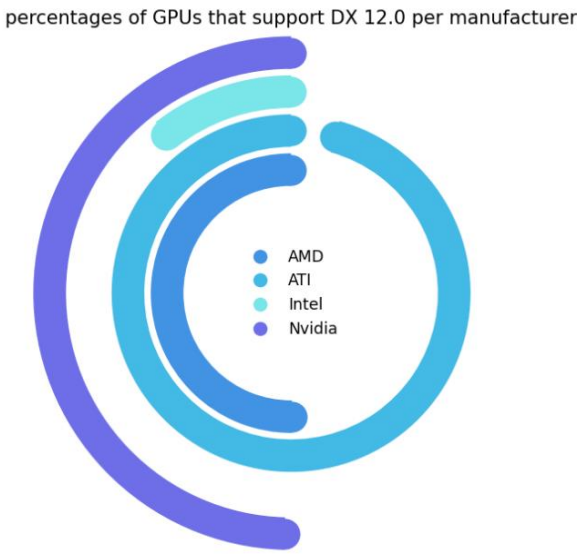


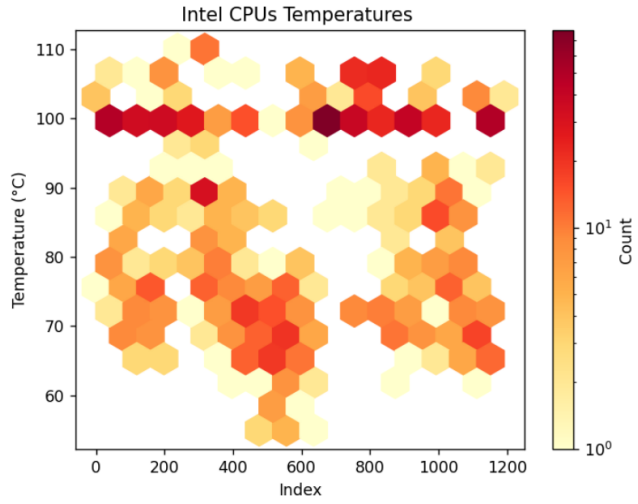
Title: GPU percentages that support DX 12.0 separated by Vendor Description: we calculated the count of all GPU's available in the Dataset of the file 'All_GPUs.csv' and the count of GPU's that support DX 12.0 grouped by vendor, a pie plot was used to represent the data

ATI GPUs were more inclusive of DirectX 12.0 technology, indicating a focus on a target market interested in gaming. It also suggests that Intel is not actively competing in this specific niche.

Historically, ATI (now AMD) has been known for its strong presence in the gaming market, offering GPUs optimized for gaming performance. DirectX 12.0 is a graphics API primarily used in gaming applications, and compatibility with this technology is crucial for optimal gaming experiences.

On the other hand, Intel is primarily recognized for its CPUs and integrated graphics solutions, rather than high-performance dedicated GPUs. While Intel has made efforts to enter the discrete GPU market with their Intel Xe architecture, they may not have the same level of focus or market share as ATI/AMD or NVIDIA when it comes to gaming-specific GPUs.

It's important to consider that the GPU market is dynamic, and competition and technology advancements can change over time.



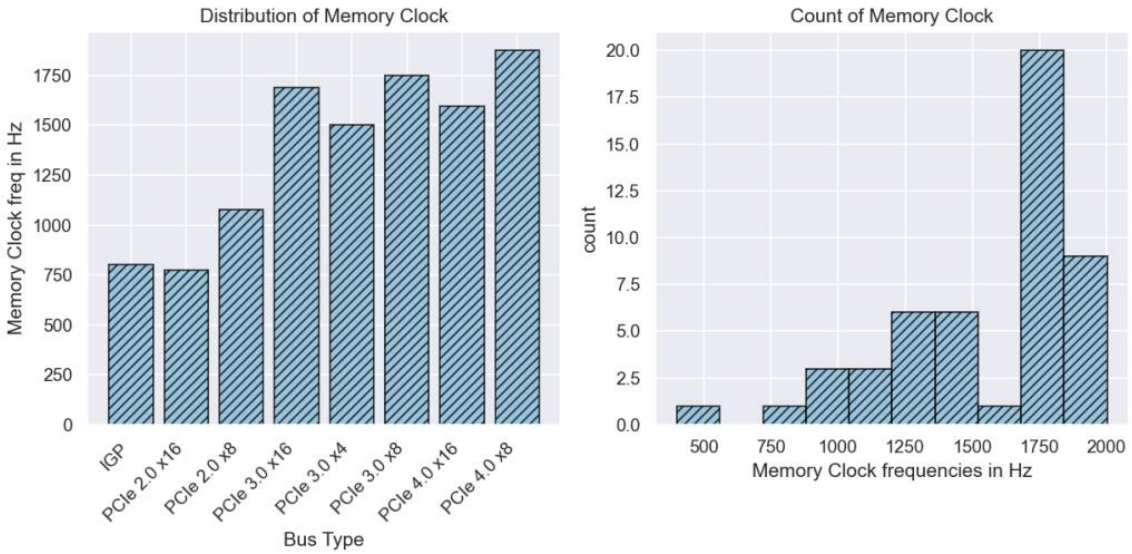
Title: plot of all intel CPUs temperatures

Description: Temperature data was extracted from 'Intel_CPUs.csv' file, iteration was used to loop through the data and unify the unit to GHz, the corrected set was then represented using a Hexagonal binned plot with a color theme appropriate for temperatures.

The most common heat or temperature range among Intel CPUs can vary depending on several factors, including the specific CPU model, generation.

Intel CPUs have a wide range of models with varying thermal characteristic. The average heat levels can differ significantly between lower-power CPUs designed for mobile devices and higher-performance CPUs intended for desktops or workstations.

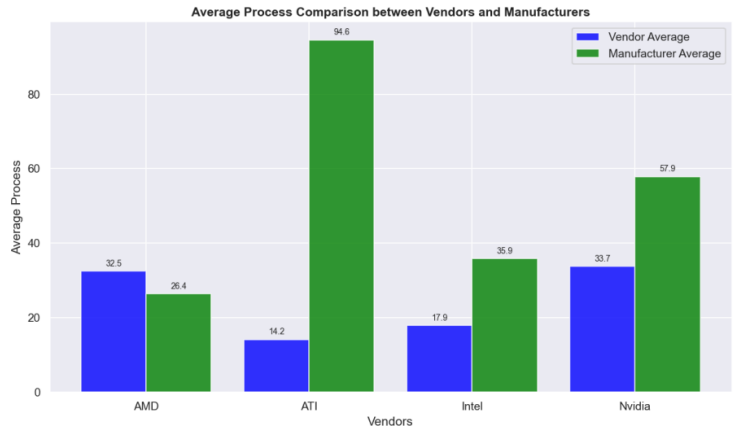
Intel CPUs are commonly designed to operate within a temperature range of approximately 40 to 80 degrees Celsius under normal operating conditions. However, individual CPU models may have different temperature tolerances, and some high-performance CPUs may operate at slightly higher temperatures under heavy workloads.



Title: Bus Type and GPU clock frequency // count of each clock frequency

Description: The data for memory clock frequencies was extracted properly from 'gpu.csv'file , null data and data in unreadable formats were either filled or excluded, the data was grouped by type of Bus and represented by a bar plot, and a histogram to display the common clock frequencies that exist in GPUs

PCIe versions, such as PCIe 3.0 or PCIe 4.0, primarily impact the bandwidth and data transfer capabilities, not the clock frequency. PCIe 4.0 offers higher bandwidth compared to PCIe 3.0, allowing for faster data transfer between components. However, the clock frequency of the CPU or GPU is determined by other factors and is not directly affected by the PCIe version. Higher clock frequencies are more common in newer PCIe versions.

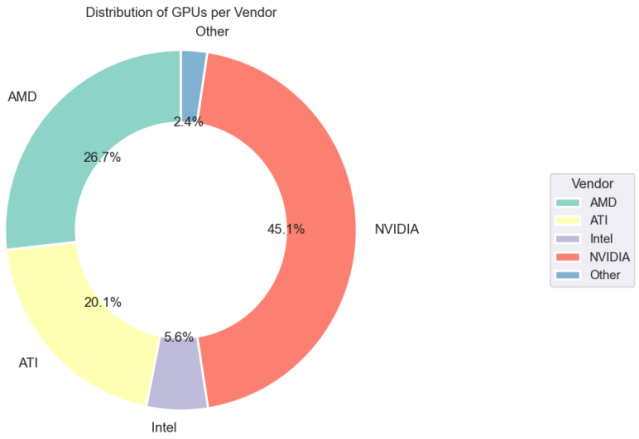


Title: comparing process averages of different manufacturers/vendors using different files

Description: Data was extracted from 'chip_dataset cpus vs gpus.csv' file and 'All_GPUs.csv', averages of Processes per Vendor/Manufacturer from both files were calculated and represented side by side in a Bar plot

the graph you mentioned was created to test the deviation or differences in data between different files. The graph revealed an anomaly in the averages for ATI, indicating a significant difference of 80.4 compared to other data points. This suggests that there may be outlier data present in the ATI processes, either in one or both files being analysed.

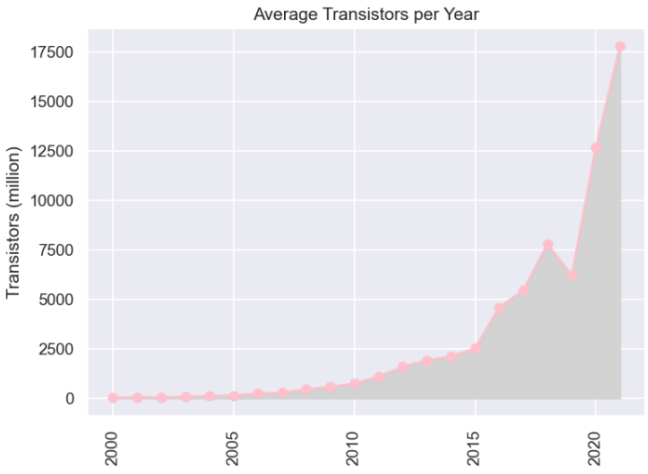
It is possible that the difference in averages for ATI processes could be influenced by the fact that ATI (a former graphics card manufacturer) was sold. When a company undergoes a significant event such as a sale or acquisition, it can have implications for its product lines, strategies, and overall performance. These changes may lead to variations in the data, especially if the datasets being compared span different time periods before and after the sale.



Title: Percentage of GPU production based on Vendor

Description: This graph simply demonstrates the percentages of GPU production from each Vendor from data extracted from 'chip_dataset cpus vs gpus.csv' and represented in a donut chart

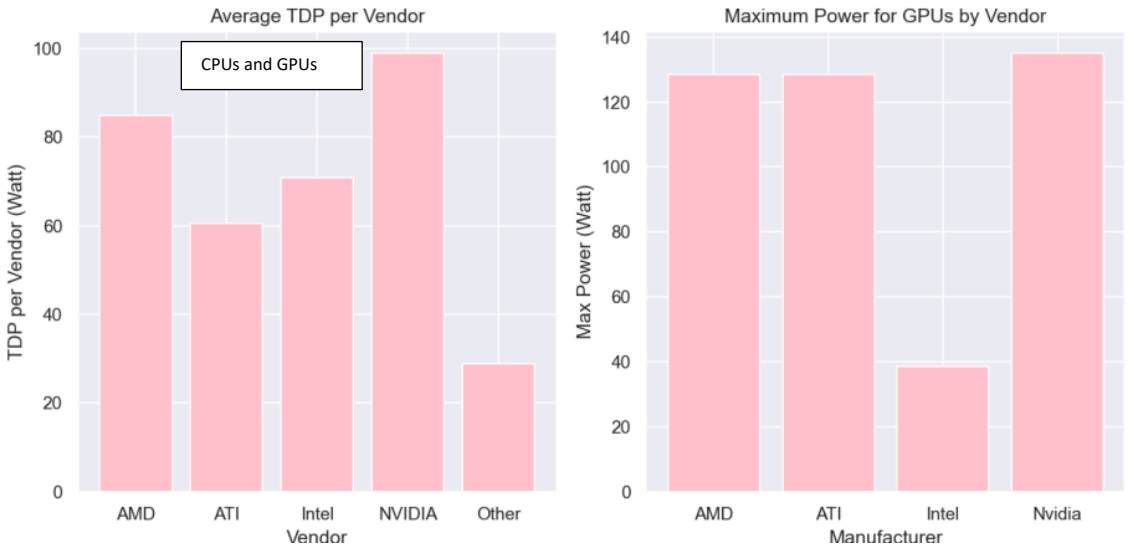
Conclusion: NVIDIA has produced the most GPUs during the timeframe and data available in the set.



Title: The growth of transistors over the years

Description: This graph represents data grouped by year representing the average number of transistors in a chip that year from 'chip_dataset cpus vs gpus.csv' file in a line plot

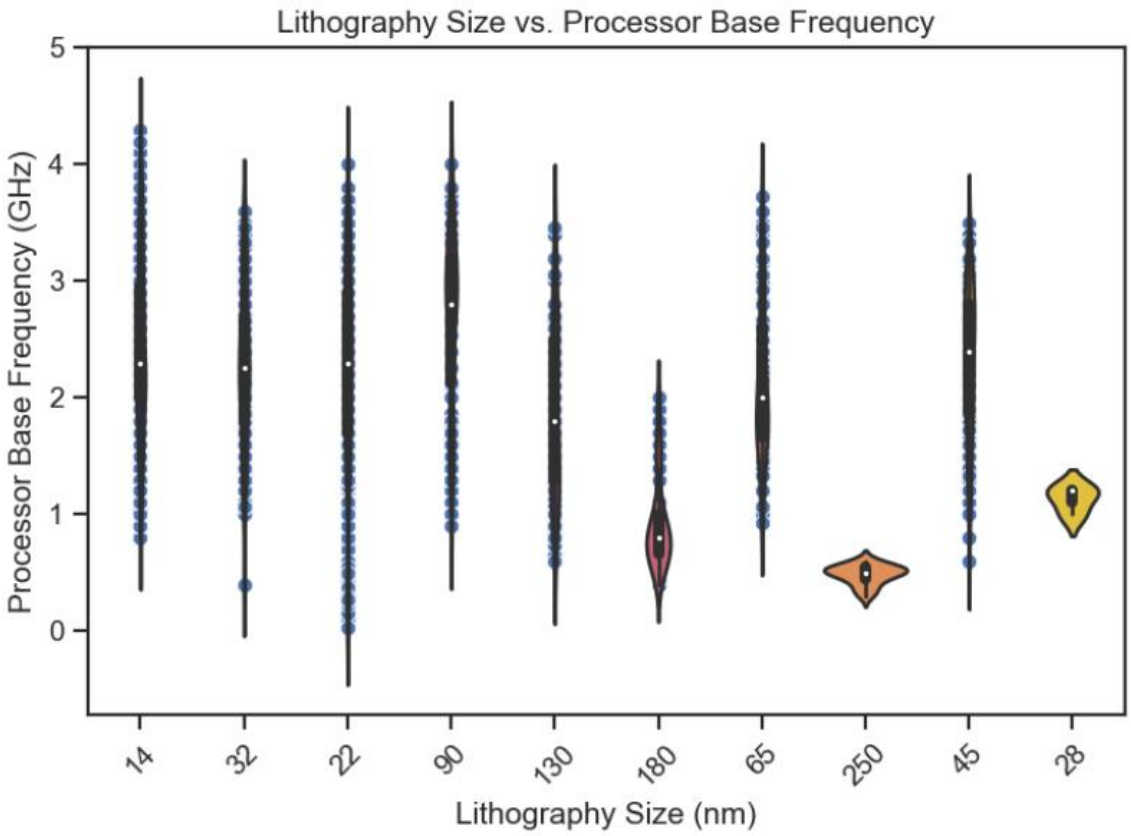
Conclusion: The graph shows exponential growth which is confirmed by Moore's Law that the number of transistors on a chip doubles every two years (2^(n/2))



Title: TDP/Power comparison between vendors

Description: TDP and Power consumption data were mapped out of two files 'chip_dataset cpus vs gpus.csv' and 2-bar plot using data from 'All_GPUs.csv' and grouped based on vendor, the data is represented in two subplots, it has to be mentioned that the data in the first file represents both CPUs and GPUs so differences in the plots are expected

Conclusion: in both plots NVIDEA has shown the most power consumption, the deviation of data between the plots for NVIDEA is small because NVIDEA mainly manufactures GPUs and the second graphs only represents GPUs, we can conclude that GPUs have higher power consumptions than CPUs which is confirmed because GPUs have a higher number of transistors switching at high frequency



Title: Relationship between Lithography and processor speed

Description: This plot explores whether there is a relationship between Lithography size and (speed) through Processor Base Frequency, data was extracted from 'Intel_CPUs.csv' file and necessary handling for differences in units (MHz/GHz) was taken, it is represented by violin plots.

Conclusion: there is a relationship between the lithography size and processor base frequencies. Specifically, for smaller lithography sizes, the processor base frequencies are evenly spread. However, for larger lithography sizes (180nm and 250nm), the frequencies are noticeably lower. This observation suggests that lithography has an impact on the speed and frequency of processors.