Project Proposal

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**The Problem**

Computer hardware is a rapidly changing world, with these changes there is constant releases of new hardware and new requirements to be able to do basic things such as accessing applications and running games. These new requirements require newer hardware which has an incredibly high performance, as a result of this there is an ever-growing price to this new hardware. The performance to cost ratio is becoming astonishing, making it less worth the money to buy the new hardware but it is becoming necessary to purchase because of the requirements of applications and games. There is also a growing monopoly which further allows companies such as Nvidia not to worry about their prices because there are limited options available.

**The Solution**

Performing a wide range of surveys and analysis will allow us to get a better idea of where people are at on computer hardware and its price to performance ratio. Once the survey and gathering of data has been conducted we can conclude whether or not certain things need to be done in order to potentially reduce the price of computer hardware or make the ratio of price to performance more balanced. There are, however, more potential solutions to this such as pleading to companies to make their applications and games more optimized, as they are not currently optimized, however, this will also be a part of the surveys and analysis in order to come up with a solution. The current initial solution is that there needs to be more companies which produce computer hardware, specifically looking at Graphics Processing Units(GPUs), as well as an increase in the capabilities of them such as including more Virtual Random Access Memory (VRAM).

**Brief Overview:**

**What is the general domain?**

The general domain of this project is computer hardware and its price vs. performance.

**Why is it important?**

This is important as it seems prices in technology are very unstable and the price to performance ratio is not getting better and I want to figure out a potential solution to this. If current trends continue having modern computing resources/computer hardware will become more inaccessible to the average consumer.

**Problem Statement & Description:**

**What is the general and specific problem that you are addressing?**

The general problem that I am addressing is the performance to price ratio of computer hardware and the specific problem that I am addressing is whether or not that the price of current computer hardware is worth it to general users, hobby users, and enthusiast users.

**What are the high-level functionalities expected to be provided in this project?**

Depending on how this question may be interpreted, I will say that the high-level functionalities are the deliverables/outcomes of the projected. I currently expect a survey to be conducted, looking at already conducted surveys, looking at

Reddit posts and creating one of my own. I also want to perform sentiment analysis on the Reddit comments and feedback received to try to more easily correlate brand happiness/hatefulness as well as see if I can get an average on the ratio of performance to cost to see what is necessary to be done. I also will create multiple graphs, and plots in order to make this information more easily understandable.

**Solution (initial ideas only):**

**Based on the proposed solution, try to define initial specifications for your project.**

Initial specifications for my project are conducting a survey, reviewing past survey data, posting a Reddit post, looking at past Reddit posts, performing sentiment analysis, as well as gathering and analyzing other data to try to come to a conclusion to the problem and how to fix it.

**What is the scope of the problem/solution (what is included/excluded)?**

Included in the scope problem/solution are all brands of computer hardware; Nvidia, Intel and AMD as well as other brands for various different parts. I will be looking at specifically performance/benchmark numbers, people's thoughts of it is worth it or not, and people's thoughts of what is needed to change the performance to cost ratio or if it is even needed in their opinion. Excluded is anything outside of this established range.

**Data:**

**Source for data, size, scope, ...**

The source for my data will be Reddit, Steam/Valve, and Discord. I will conduct a survey as well as look at already existing surveys and information posted in order to mine it and use in my own data set. I want to get a wide range of people to comment on this problem so the size of this data could be potentially large.

**Proposed Project details and Timeline**

**Steps you are planning to follow in order implement the project?**

I intend on posting a Reddit post, conducting a survey, looking at past Reddit posts and surveys, aggregating results of both of these, conducting sentiment analysis, reviewing feedback and survey data and then coming up with a solution based on the results of the data.

**Individual or team project? Project only or research paper combined?**

Individual project, research paper combined.

**Using own laptop, a server, or the cloud?**

Personal servers and computing hardware.

**Other:**

**Any other specific issues to be addressed**

I do not believe there are other specific issues at this time.

I pledge that on all academic work that I submit, I will neither give nor receive unauthorized aid, nor will I present another person's work as my own.

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