

Chris & Chris Podcast — 1/28/2018

Special Episode: Would You Rather: Game or Mine?

Story Time

- Oranges.

Main Topic: *Cash.* *Seems to be the driving force behind all the choices we make these days.*

- [GPU Prices Skyrocket, Breaking the Entire DIY PC Market](#)
 - [Define GPU](#): A piece of hardware that is specifically designed for display functions.
 - When you look at a computer display, or any electronic display for that matter, it is likely the screen you're looking at was rendered by a **GPU, a.k.a., a "Graphics Processing Unit."** GPU's are awesome, because they render animations and decode videos. Entertainment! Woo!
 - Think of an electronic screen like a grid--well, **a screen is a grid, comprised of pixels, or "picture elements."**
 - Screens have a "resolution," that is, a set number of pixels that can be manipulated to display an image on a screen. A GPU is **designed for processing and rendering each part of a screen/grid/pixel simultaneously.**
 - There are **multiple "cores"** inside a GPU that focus on these areas.
 - **Probably a highly inaccurate but interesting example for all you laymen out there:** Let's say one "core" of a GPU will focus on rendering the first 100 pixels that comprise a device's screen.
 - Another core will focus on the next 100px, or the next part of the screen/grid. **GPUs are designed to render this information in parallel**--designed so that a user experiences movement on a screen smoothly and without any delay.
 - Again, as an example: a piece of the screen "grid" can be rendered by an individual core on a GPU. Again, **GPUs** render images, animations, and videos for a computer screen, and are **extremely powerful and efficient at performing the necessary calculations simultaneously**, to ensure that your experience with your device is all smooth and buttery.
 - There's a lot of engineering behind GPU's and as time goes on, video games look prettier, screens get bigger, and as we humans rely on computers to interact in our day to day lives... computers need to become faster, more powerful, and more sophisticated.
 - So... **Encryption!** [TechTarget definition](#):
"In computing, encryption is the method by which plaintext or any other type of data is converted from a readable form to an encoded version that can only be decoded by another entity if they have access to a decryption key. Encryption is one of the most important methods for providing data security, especially for end-to-end protection of data transmitted across networks."

- We rely on encryption to keep our sensitive information safe from prying eyes. Passwords, health information, and other personal information are secured by cryptography.
 - However, **encryption can be a computationally-intensive process**, and many types of encryption benefit from hardware that can compute in parallel. Well, GPUs are designed to process information in parallel, so **it makes sense to use a GPU to perform cryptographic functions**. Which is where cryptocurrencies come into play.
 - Maybe you've heard of **cryptocurrency mining**, maybe not.
 - *Bitcoin this, ethereum that. Another topic for another day.*
 - Cryptocurrency mining can be **profitable**, and it appears that an increasing number of people want to get in on the action.
 - **To “mine” cryptocurrency requires a significant amount of computing power.** Let's define:
 - [Mike Orcutt via Technology Review](#):
“[Cryptocurrency] mining is a computationally intensive process that computers comprising a cryptocurrency network complete to verify the transaction record, called the blockchain, and receive digital coins in return.”
 - **We think cryptocurrencies are great**--it's the latest craze, and we are supporters of the exciting technology that is the “blockchain” in general.
 - The nature of cryptocurrency--decentralization, self-regulation, taking power from the hands of manipulative financial institutions and putting it back into the pockets of everyday citizens... it's fascinating--revolutionary even!
 - **But there's a problem. If someone wanted to build their own computer today**, there's a good chance **they wouldn't be able to afford it**.
 - People looking to “mine” are **looking for powerful hardware** that can quickly perform the calculations necessary to **earn valuable cryptocurrency**.
 - Conveniently, **hardware for this purpose already exists**.
 - Can you guess what type of hardware we're talking about? **You're correct: GPUs**.
 - [PC Mag Encyclopedia](#): *“Since GPUs perform parallel operations on multiple sets of data, they are increasingly used as ... processors for non-graphics applications that require repetitive computations.”*
 - So what's going on? **Cryptocurrency miners are driving GPU prices sky high**.
 - *And we're really, really f*cking frustrated...*
- [Cryptocurrencies Are Making It Impossible To Afford A Great Gaming PC](#)
 - **Anonymous(?) Via Forbes**:
“Right now, unless you have no other alternative, no one should build a gaming PC. If you learn nothing else from me today, take that bit to heart.”

Current GPU pricing via GameSpot:

GPU	MSRP	Street Price
Nvidia GeForce GTX 1080 Ti	\$700	\$1,350
Nvidia GeForce GTX 1080	\$550	\$1,100
Nvidia GeForce GTX 1070 Ti	\$450	\$800
Nvidia GeForce GTX 1070	\$380	\$900
Nvidia GeForce GTX 1060	\$250	\$400
Nvidia GeForce GTX 1050 Ti	\$150	\$185
Nvidia GeForce GTX 1050	\$110	\$140
AMD Radeon RX Vega 64	\$500	\$1,500
AMD Radeon RX Vega 56	\$400	NA
AMD Radeon RX 580 8GB	\$229	\$540
AMD Radeon RX 580 4GB	\$200	\$495
AMD Radeon RX 570	\$170	\$476

- **Thoughts on current pricing** (table above, even though it's already outdated)
 - What we've noticed is that every card from entry-level to high-end GPUs are double, triple, or even quadruple their normal price. Research on eBay and Amazon confirms this.
- **So what do you do if you need a new computer to play video games on now?**
 - ...Well, **gaming laptops** are becoming increasingly appealing.
 - The **laptop market seems to be largely isolated** from the crypto-craze hitting the desktop GPU market right now. Nobody wants to mine with a laptop, especially because their return on investment is very poor.
 - But gaming laptops have been getting more and more capable. It's still **more expensive** than what a gaming desktop computer "should cost," but honestly, it **might be worth looking in to**.
 - Or... **consoles?**
 - It all depends on whether or not the games you want to play are for PC or are also available on consoles.
 - Consoles are cheaper and serve the same purpose if you're looking to play popular games.
 - *As to when this madness will end, only time will tell we guess!*
 - **In the meantime...**

- Retailers need to (and some are already) **taking measures** to make sure that graphics cards they are selling are **being used solely for gaming**. *Thank you guys! Sincerely, us.*
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Question:

- **What music are you listening to these days?**
 - **Chris:** I don't listen to music much these days--If I do, it's more nostalgic than anything else... Metallica is awesome.
 - **Chris:** Lately I've been getting into Miles Davis. Really great stuff that I wish I'd heard earlier in my life.
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We have released *Cloudstone*, our first sample pack!

*First ten customers will receive a 20% discount using code: **CSQUARED***

Check it out at <https://chrisandchris.media/samples/cloudstone>.

It's perfect for producers looking for new sounds, and an excellent way to support the show! <3

Email chrisandchrispod@gmail.com, or visit <https://chrisandchris.media/contact> to send us your questions, comments, thoughts, or any other inquiries you can think of!