



INVESTIGATING THE EFFECT OF CRYPTOCURRENCY PRICING AND DEMAND ON THE GLOBAL CHIP MARKET



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BACKGROUND AND PRIOR WORK

Graphics Processing Units (GPU) vs. Central Processing Units (CPU)

- Architecture and applications

Cryptocurrency Price Hikes and Simultaneous GPU Scalping

- Cryptocurrency mining and GPU effectiveness
- Gaming community sentiment towards crypto miners

RESEARCH QUESTION

How much of an impact do cryptocurrency miners/prices actually have on GPU prices and stock for individual customers (e.g. gamers)? Are there any other factors that have had a larger impact (e.g. global chip shortage affecting GPUs and other kinds of chips)?

PC BUILDING COMMUNITY SENTIMENT TOWARDS CRYPTOCURRENCY



I've grown to really hate cryptocurrency. The main form of generating them is via the use of computers with really powerful graphics cards, which have been scalped to death for over a year now. I work in 3D modeling and am making my own video game, and I'm running off of an almost 5 year old GTX 1060, which is not good for what I need to do which is heavy environment design and rendering 4K animations in decent time. I've been trying to get one of the new RTX cards but because of Crypto Reddit lords making bots to scalp them, I still haven't found one and I'm very concerned that my 1060 will die on me within the next few months.

My job actually relies on me getting one of these new cards and it makes me beyond upset, I really wish I could burn every crypto mining facility to the ground so it crashes their value, and we can finally have a somewhat better GPU market.

144 Share ...



HYPOTHESIS

We suspect that cryptocurrency miners do have some impact on GPU prices and supply, though its impact is often exaggerated by gamers on online communities.

External factors such as chip (semiconductor) shortages often have a greater impact on price and supply.

DATASETS

STEAM SURVEYS

Steam Hardware Survey (2008-2023)

YAHOO FINANCE

Yahoo Finance Bitcoin Historical Data (2015-2023)

Yahoo Finance Ethereum Historical Data (2017-2023)

EBAY TERAPEAK

Ebay Terapeak GPU sell price/volume (since 2020)

Ebay Terapeak CPU sell price/volume (since 2020)

MSRP DATA

GPU Original MSRPs

CPU Original MSRPs



DATA CLEANING

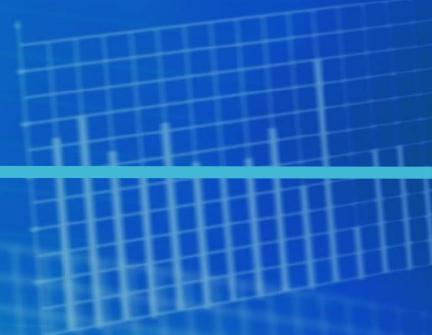
- **Steam Hardware Survey**
 - 2015, junk data, desktop GPUs only
- **Ethereum and Bitcoin Data**
 - already cleaned by Yahoo
- **GPU and CPU Sell Prices/Volume**
 - Name/date standardization, data removal
- **GPU and CPU MSRP**
 - Name standardization

```
In [3]: steam_survey['category'].unique()

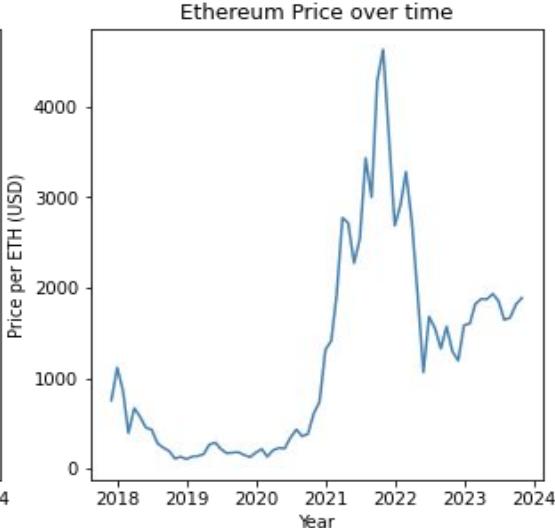
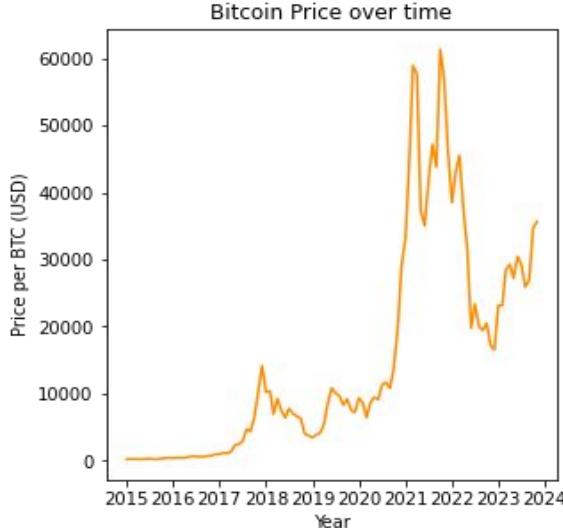
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   'DirectX 10 GPUs',
   'DirectX 10 Systems (Vista with DirectX 10 GPU)',
   'DirectX 9 Shader Model 2.0 GPUs',
   'DirectX 9 Shader Model 2b and 3.0 GPUs', 'Drive Type',
   'Free Hard Drive Space', 'Intel CPU Speeds', 'Language',
   'MSAA Support Level', 'Microphones', 'Multi-GPU Systems',
   'Multi-Monitor Desktop Resolution', 'NVIDIA Drivers',
   'Network Speed', 'Other Settings', 'Physical CPUs',
   'Primary Display Resolution', 'Processor Vendor', 'System RAM',
   'Total Hard Drive Space', 'VRAM', 'Video Card Description',
   'Video Card Driver Name', 'Windows Version',
   'DirectX 10 Systems (Vista/Win7 & DX 10 GPU)', 'DirectX 11 GPUs',
   'DirectX 11 Systems (Vista/Win7 & DX 11 GPU)', 'OS Version',
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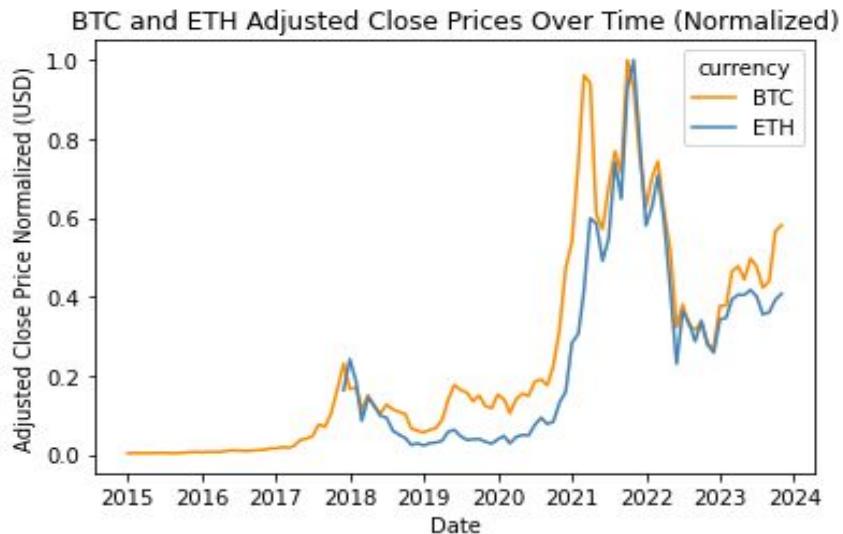
LINE PLOTS



Cryptocurrency Prices

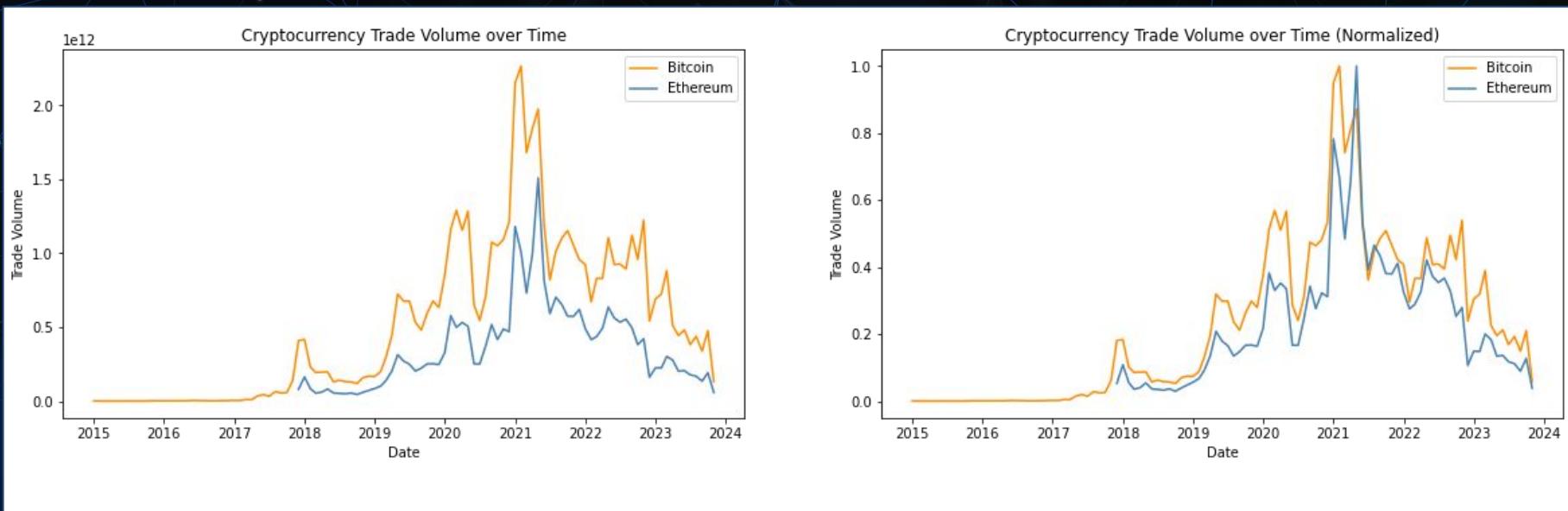


COMPARISON - CRYPTOCURRENCY PRICES



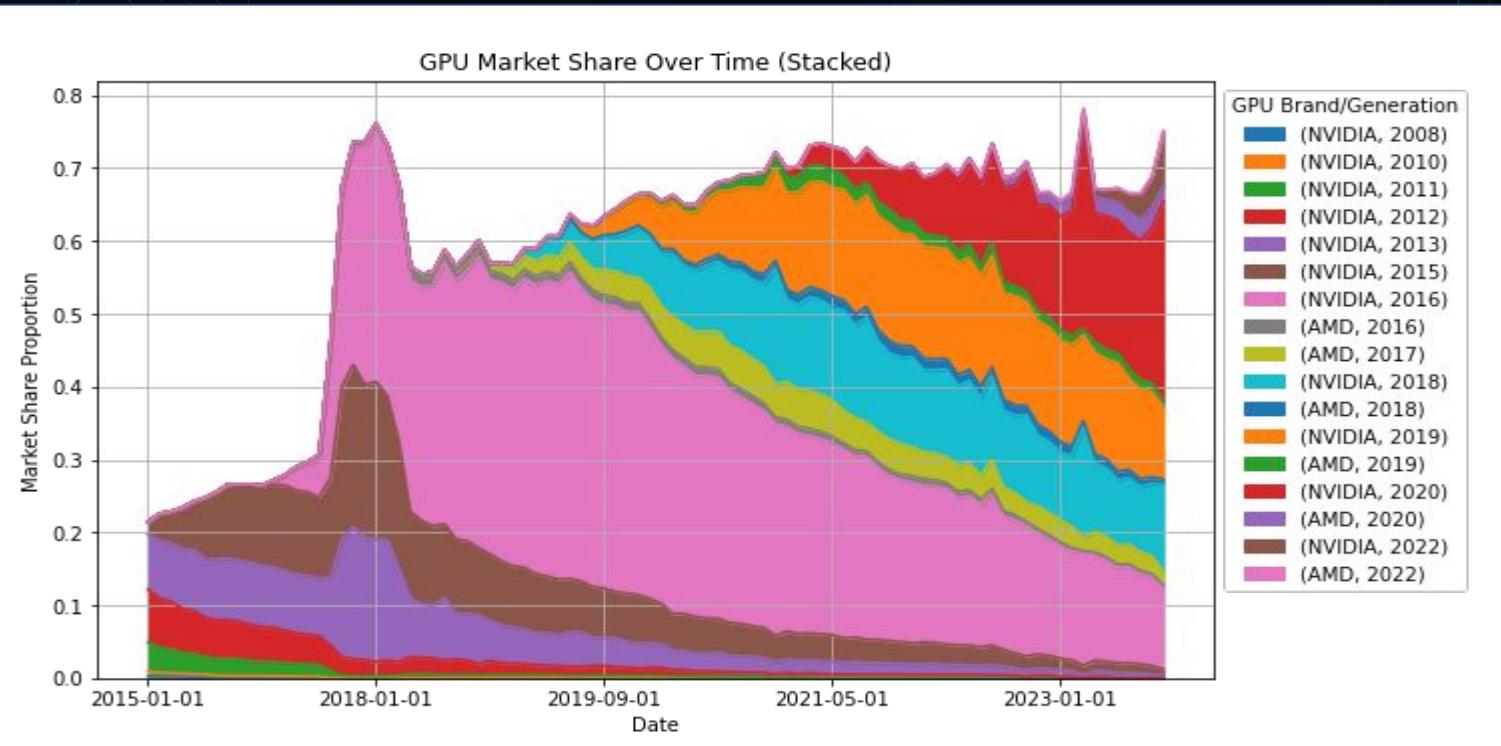
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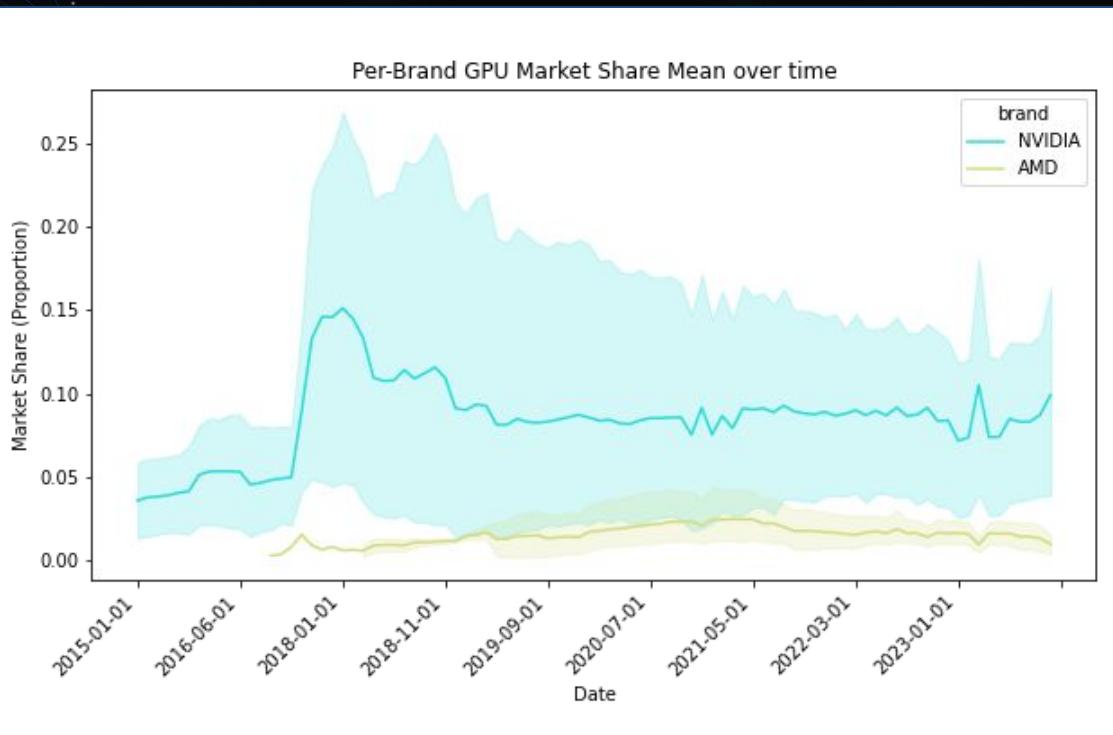
CRYPTOCURRENCY TRADE VOLUME

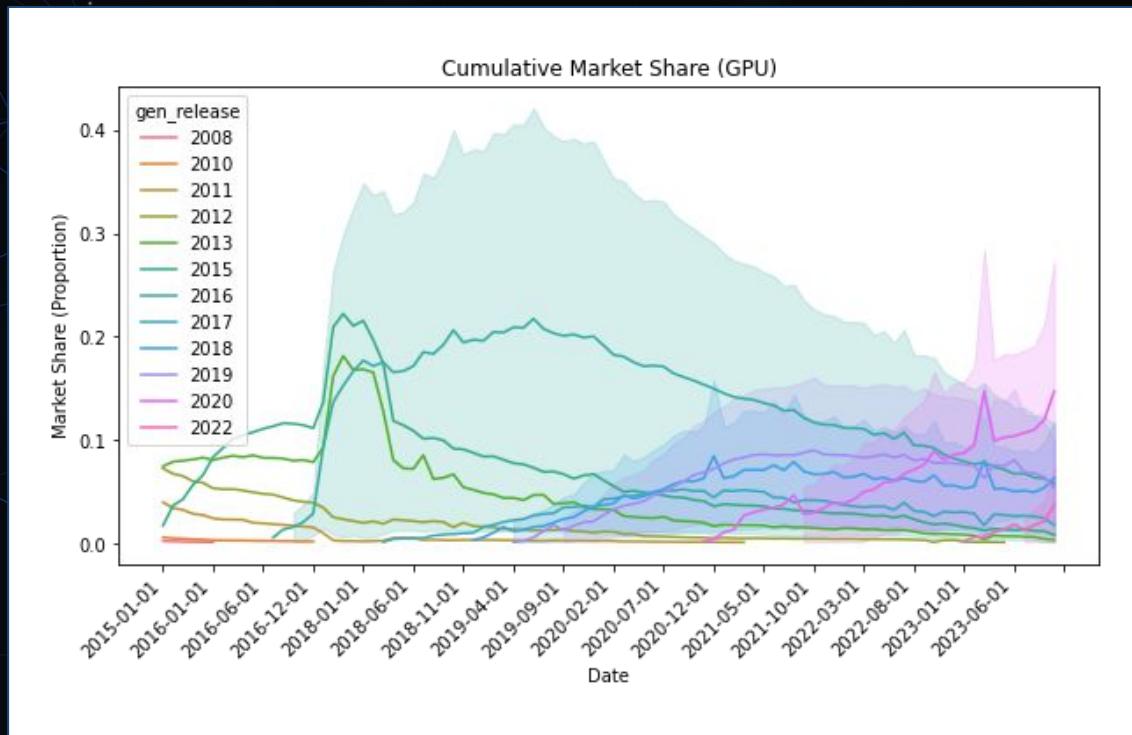


GPU MARKET SHARE AMONG GAMERS OVER TIME





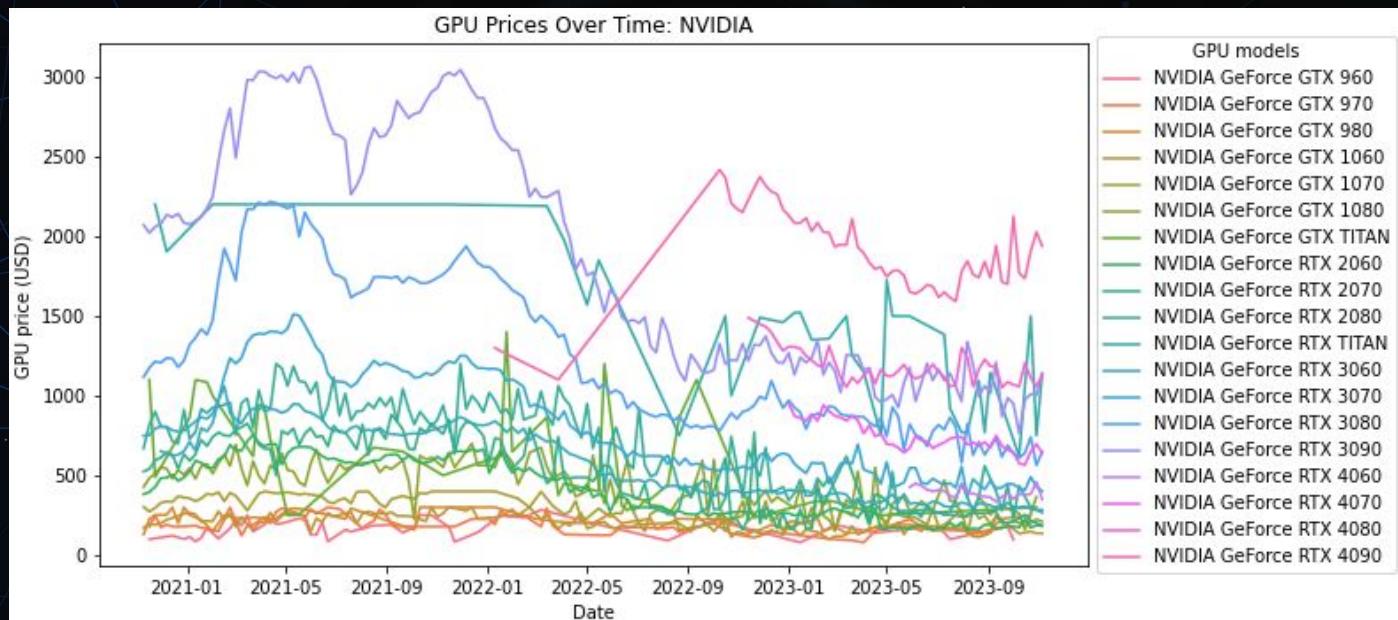


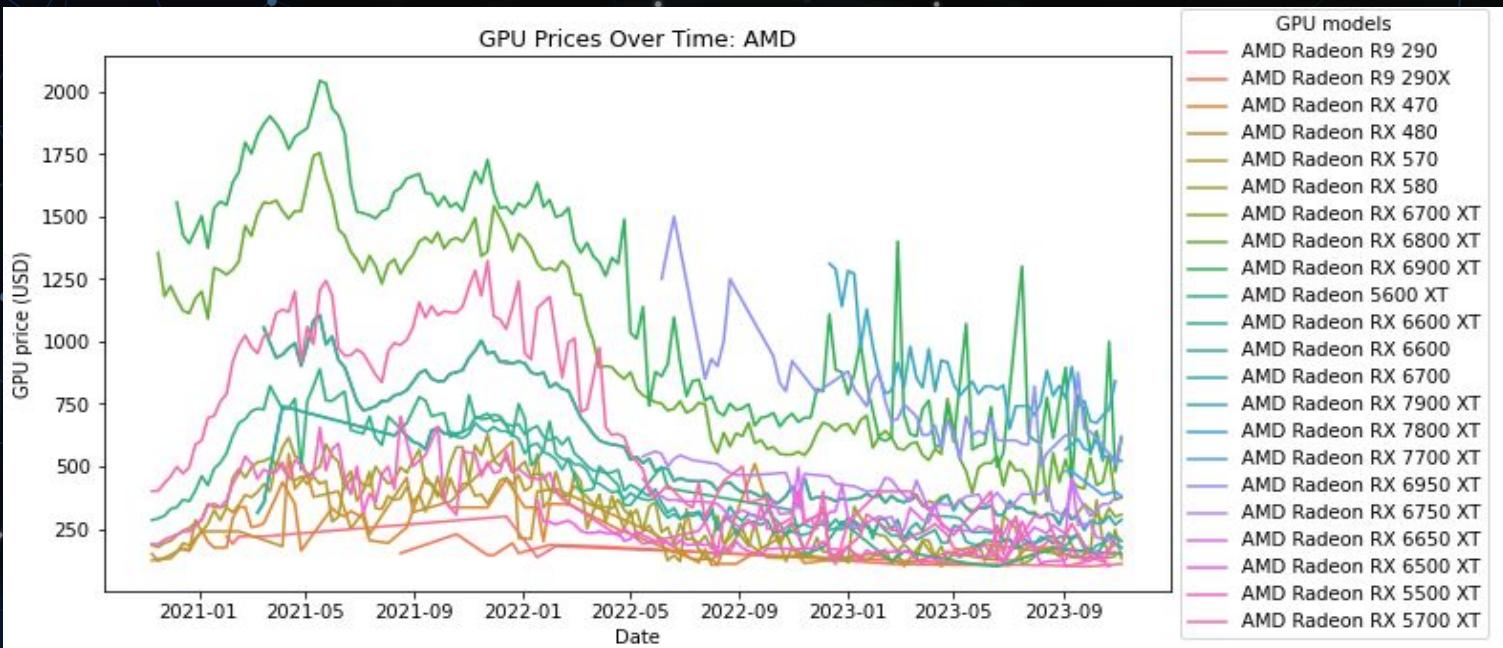


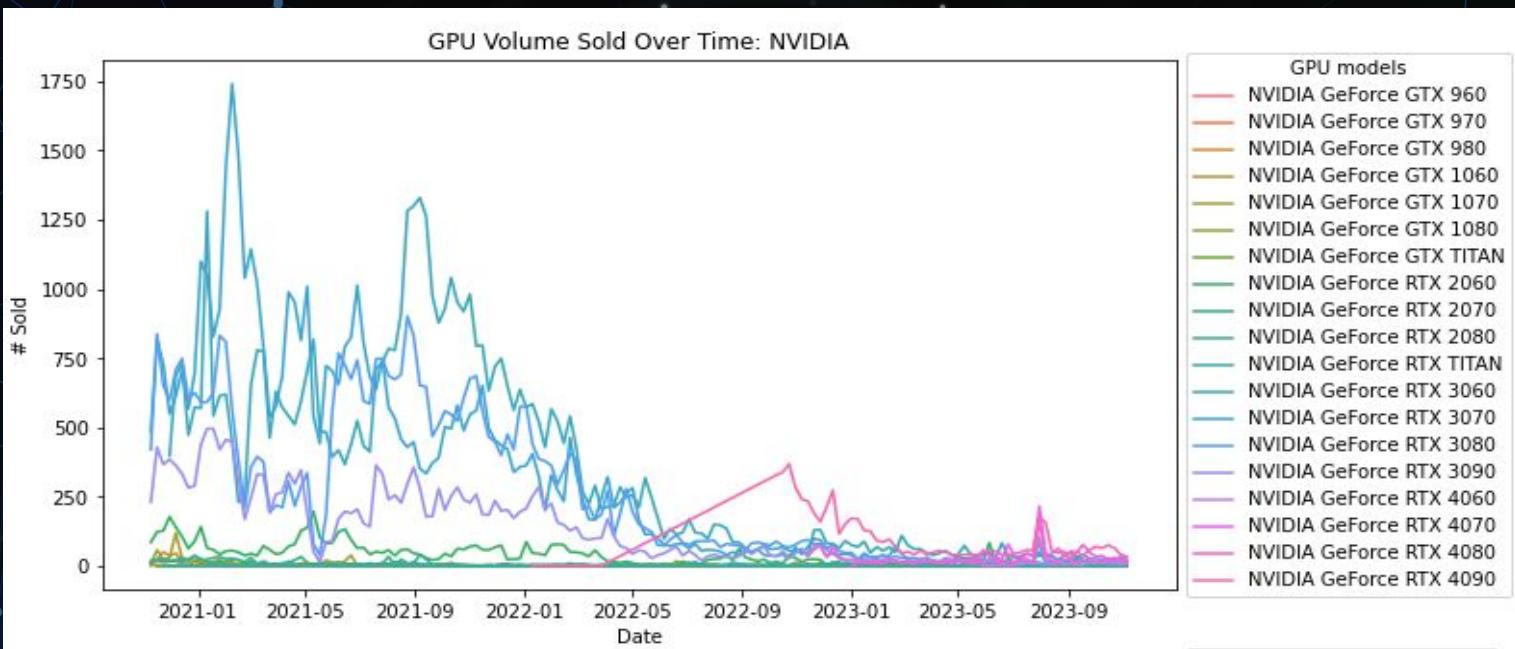
EXPLORATORY DATA ANALYSIS



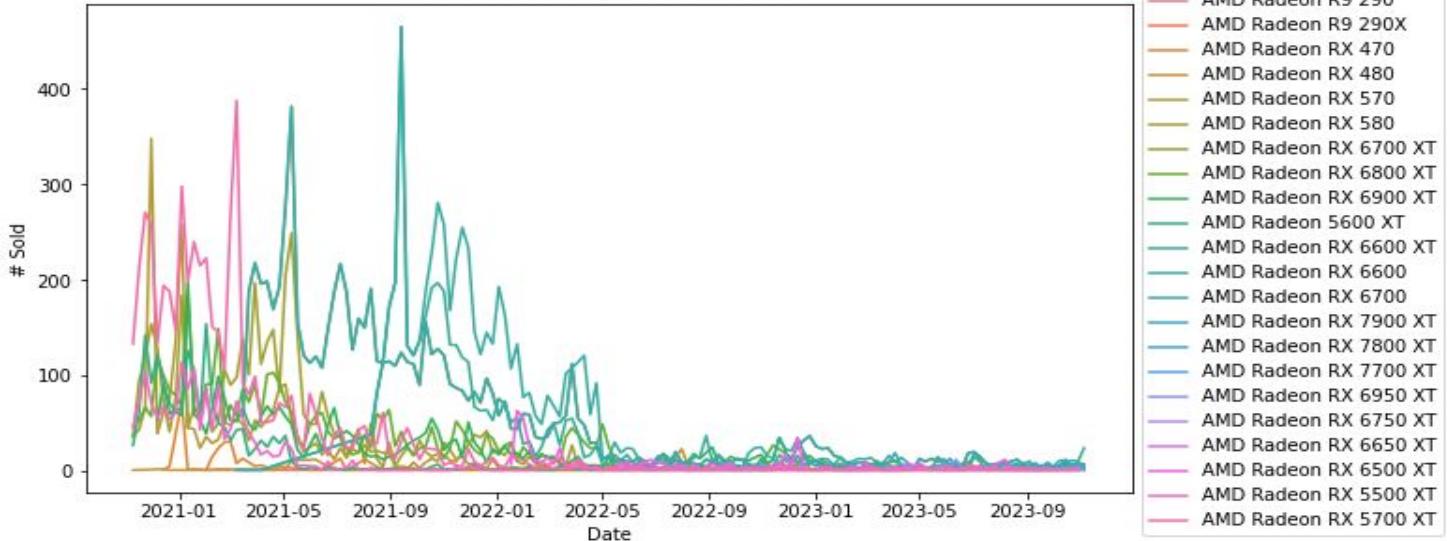
DATA
SCIENCE







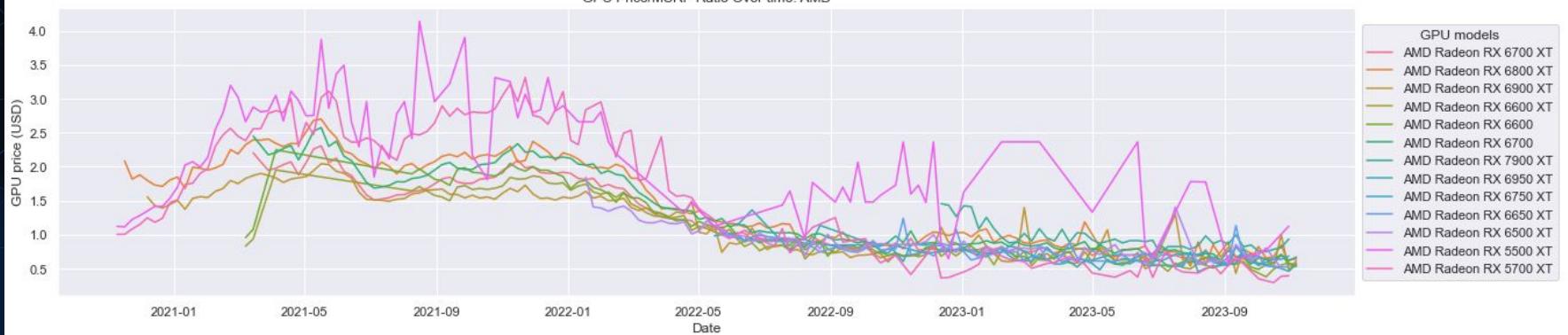
GPU Volume Sold Over Time: AMD

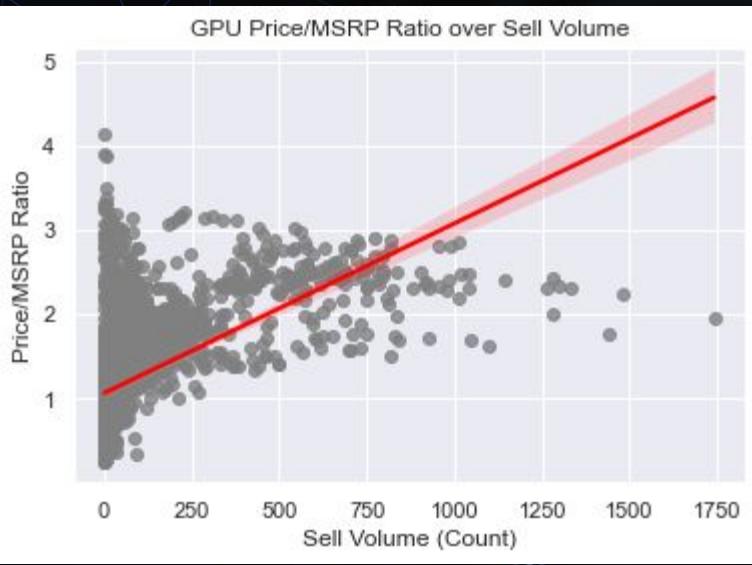


GPU Price/MSRP Ratio Over time: NVIDIA



GPU Price/MSRP Ratio Over time: AMD





Correlation:
0.5412430717668889

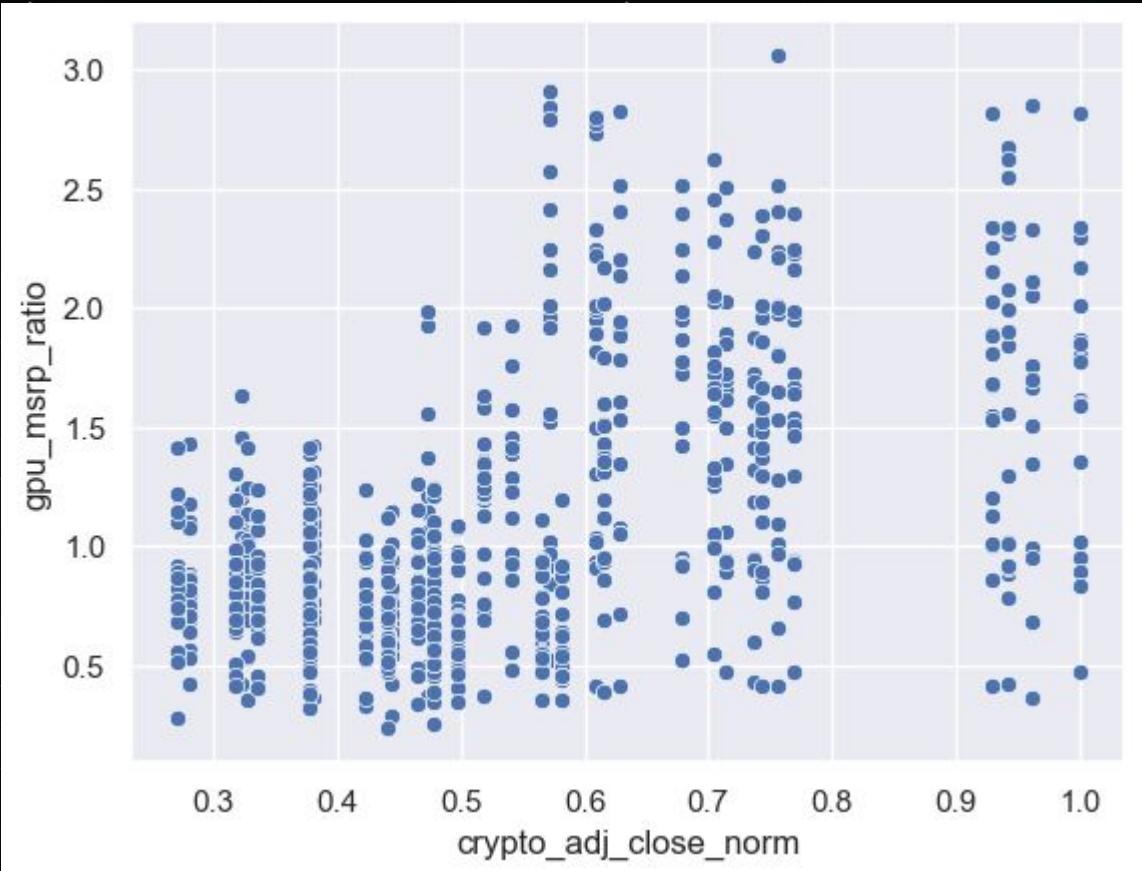


https://github.com/COGS108/Group052_FA23/blob/master/FinalProject_Group052_FA23.ipynb, gonna have to click on cpu prices and volume over time from github, will do video editing for this



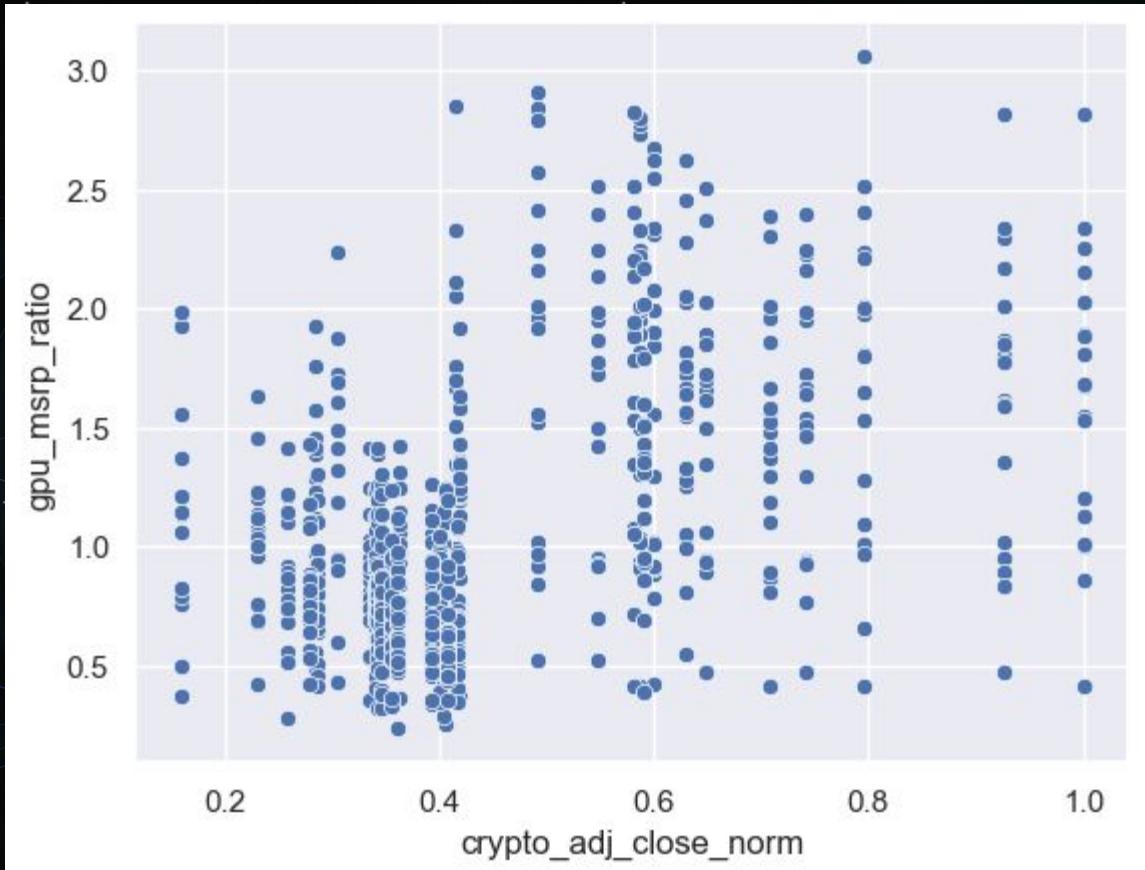
PAIRPLOT

BITCOIN vs. GPU MSRP RATIO



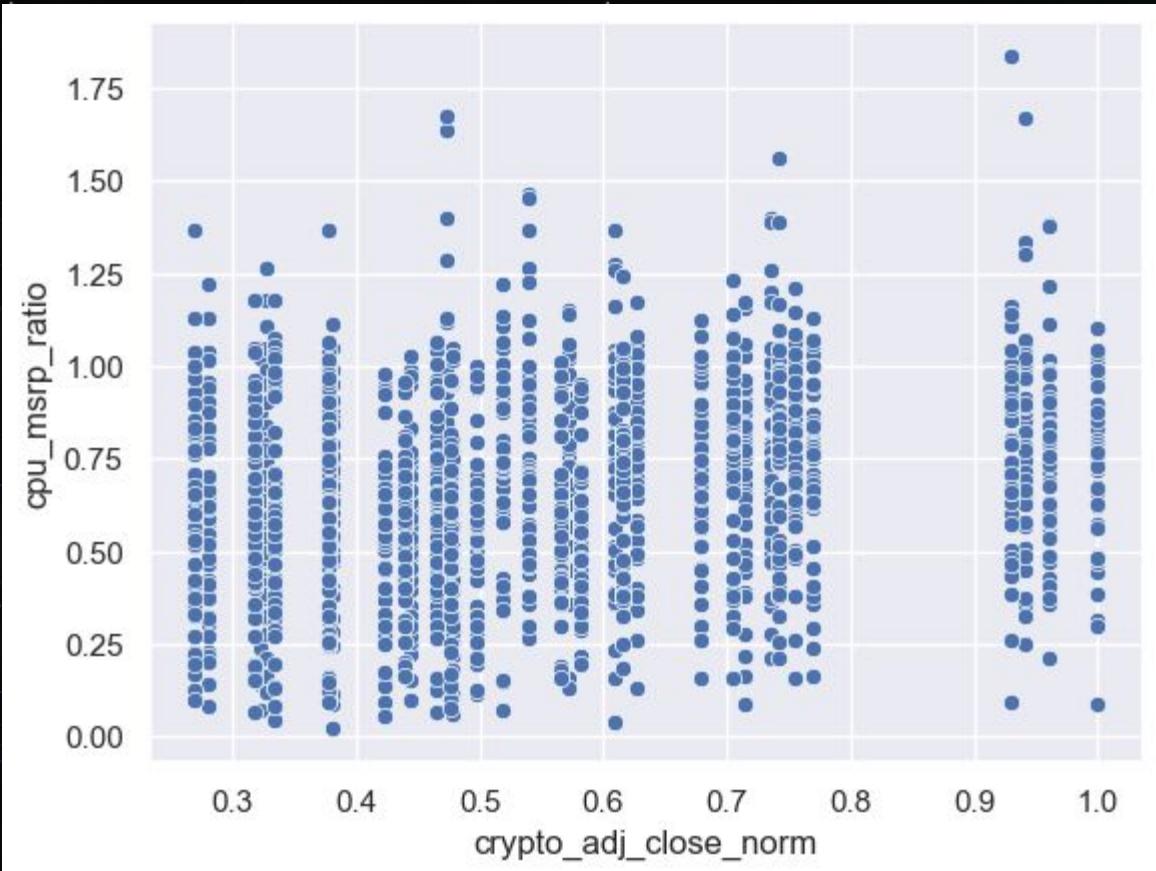
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ETHEREUM vs. GPU MSRP RATIO



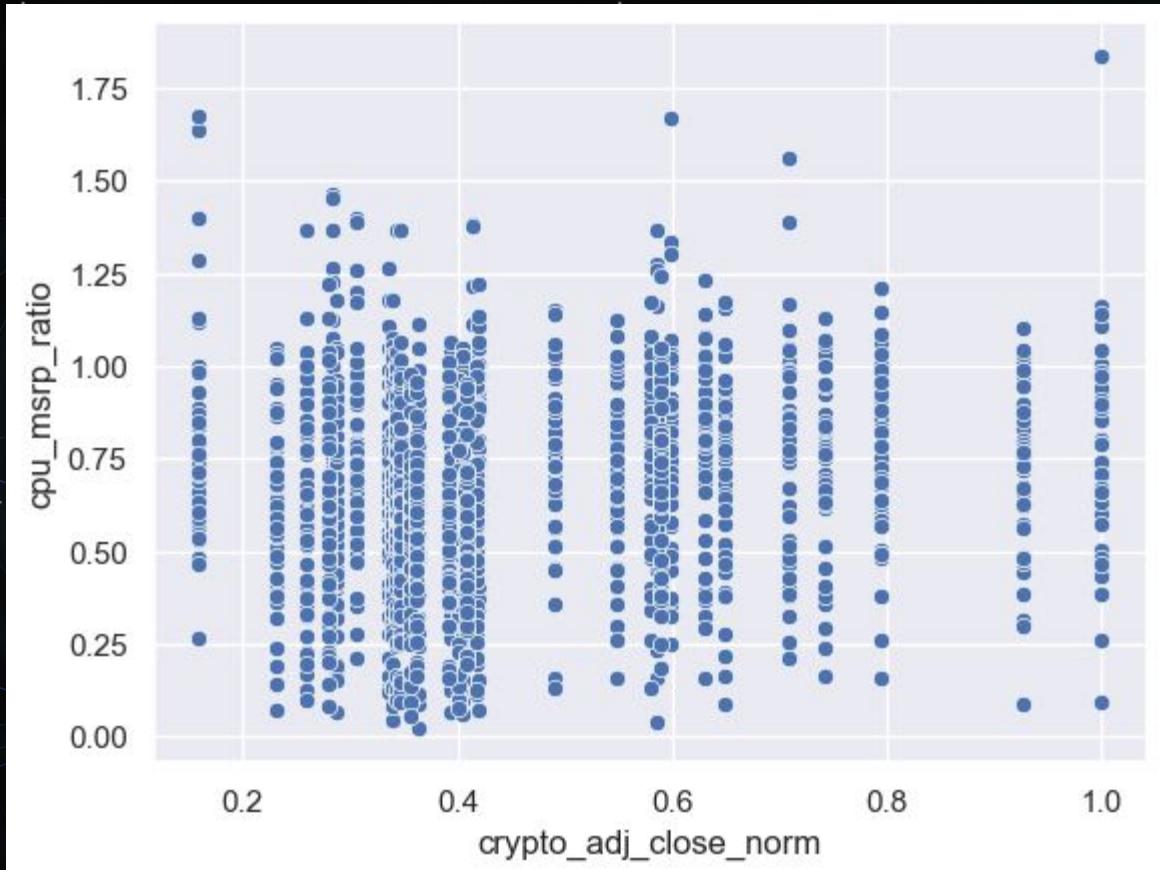
PAIRPLOT

BITCOIN vs. CPU MSRP RATIO



PAIRPLOT

ETHEREUM vs. CPU MSRP RATIO



PREDICTIVE POWER

GPU PREDICTION

0.41189431675719934

CPU PREDICTION

0.06854712347783767

CONCLUSION

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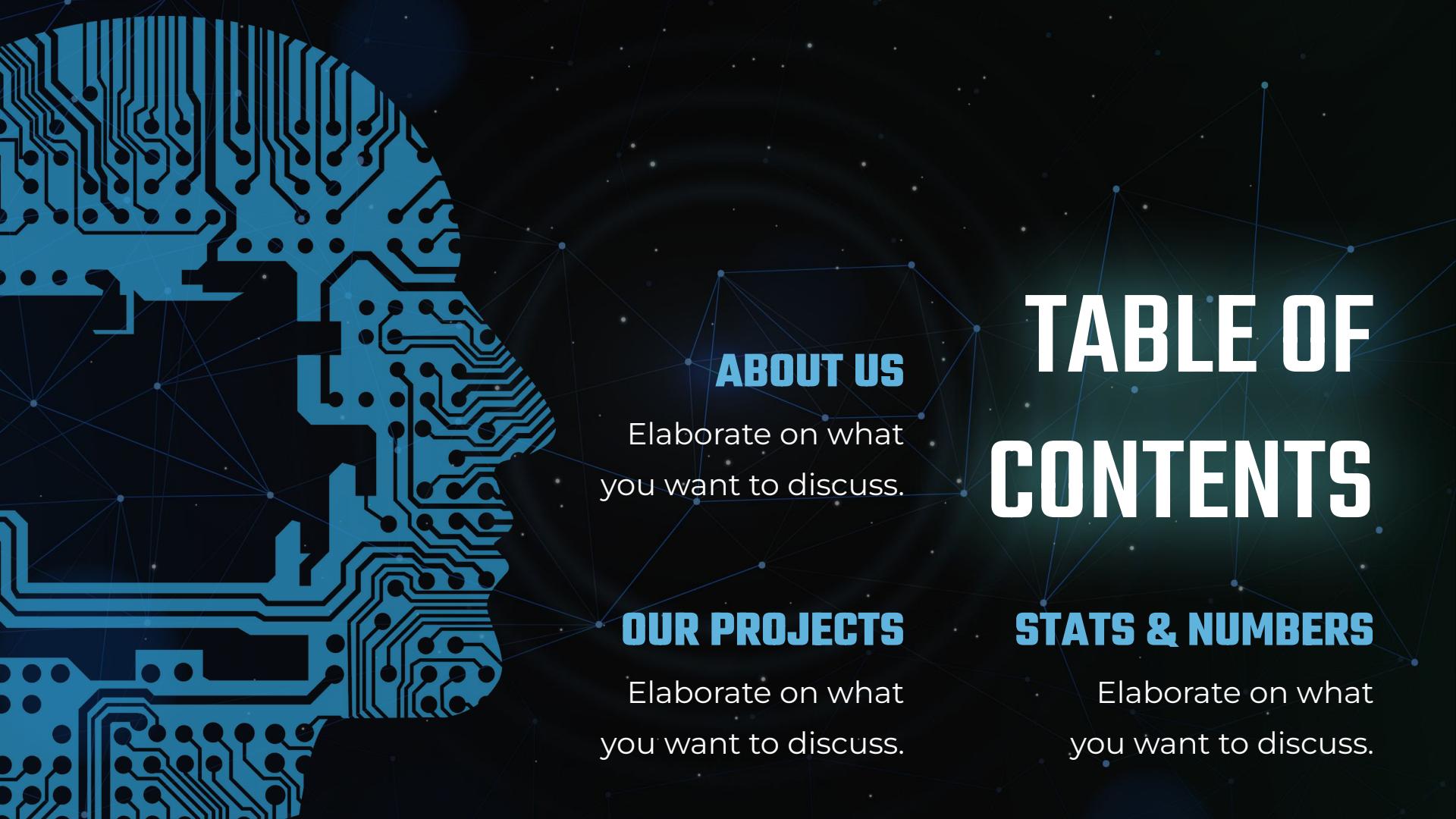


TABLE OF CONTENTS

ABOUT US

Elaborate on what
you want to discuss.

OUR PROJECTS

Elaborate on what
you want to discuss.

STATS & NUMBERS

Elaborate on what
you want to discuss.



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vision statement!

VISION

Enter your grand
vision statement!

ABOUT US

WHO WE ARE?

Briefly elaborate on what you want to discuss.

WHAT WE DO?

Briefly elaborate on what you want to discuss.





GALLERY IMAGE

What can you say about your projects? Share it here!



ADD A TABLE

ADD A MAIN POINT

Briefly elaborate on what you want to discuss.

ADD A MAIN POINT

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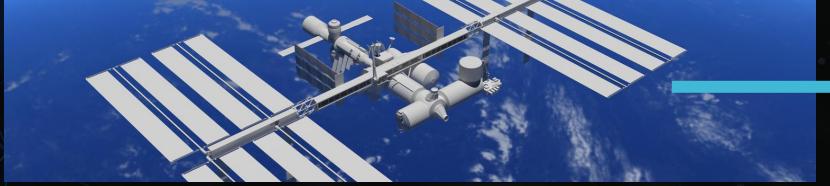
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WRITE YOUR IDEA



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Briefly elaborate on what you want to discuss.



Briefly elaborate on what you want to discuss.



Briefly elaborate on what you want to discuss.

ooo

WRITE AN ORIGINAL STATEMENT OR INSPIRING QUOTE

— include a credit, citation, or supporting message



ADD A TEAM MEMBERS PAGE



NAME

Title or Position



NAME

Title or Position



NAME

Title or Position



NAME

Title or Position

Elaborate on what you
want to discuss.

TESTIMONIALS



CLIENT NAME

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you want to discuss.



CLIENT NAME

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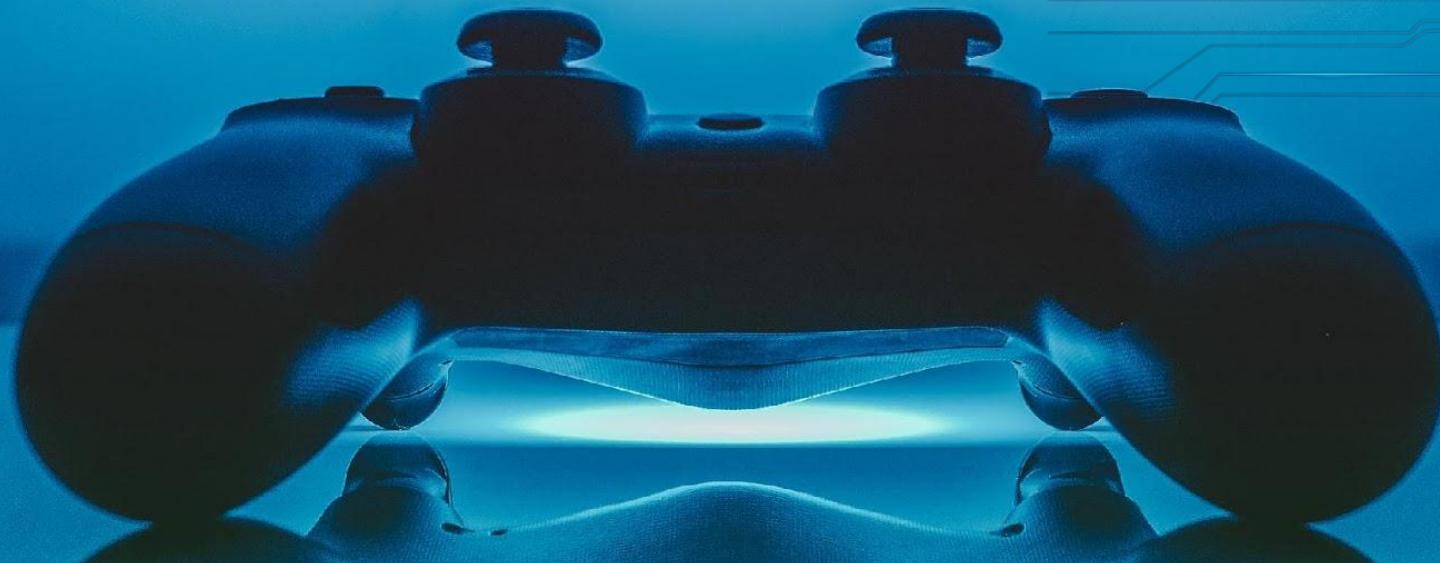


CLIENT NAME

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OUR PROJECTS

Elaborate on what you
want to discuss.





YOUR PROJECT

Presentations are communication tools that can be used as demonstrations, lectures, speeches, reports, and more. It is mostly presented before an audience. It serves a variety of purposes, making presentations powerful tools for convincing and teaching.

YEAR: 2022

ROLE: WRITE YOUR ROLE



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A PICTURE IS WORTH A
THOUSAND WORDS

WRITE YOUR TOPIC OR IDEA



ADD A MAIN POINT

Briefly elaborate on what you want to discuss.



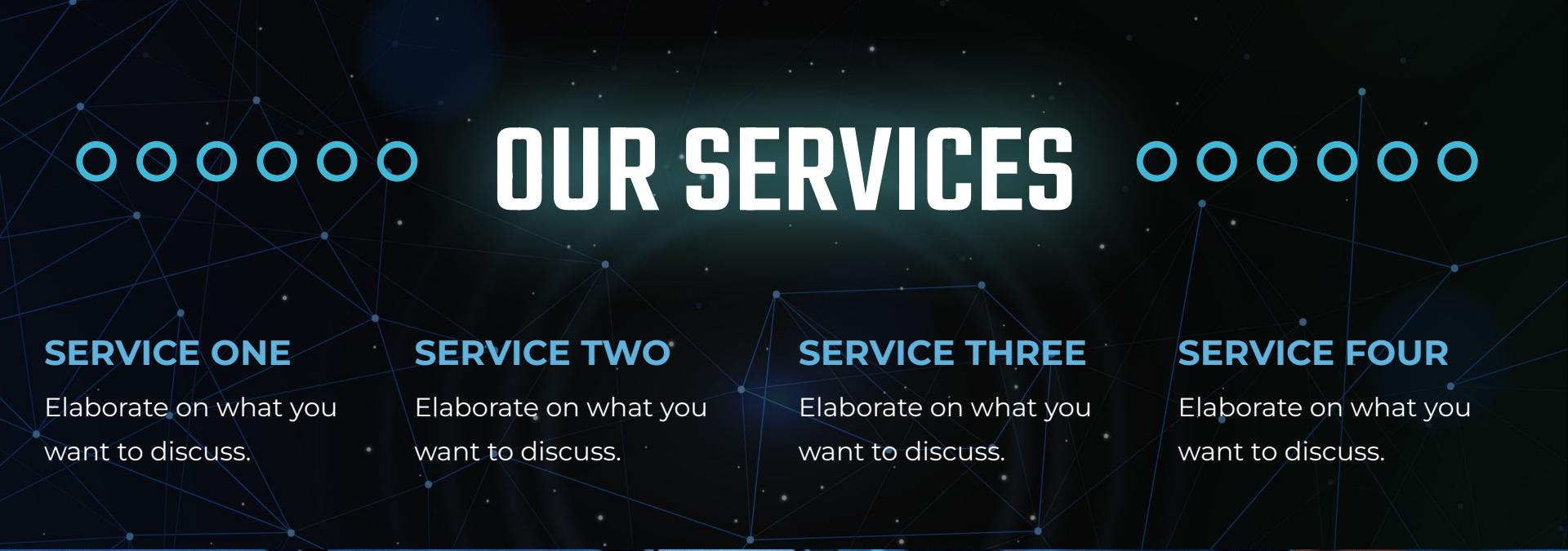
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ADD A MAIN POINT

Briefly elaborate on what you want to discuss.



OUR SERVICES

SERVICE ONE

Elaborate on what you want to discuss.

SERVICE TWO

Elaborate on what you want to discuss.

SERVICE THREE

Elaborate on what you want to discuss.

SERVICE FOUR

Elaborate on what you want to discuss.



WRITE YOUR BIG TOPIC OR IDEA

Presentations are communication tools that can be used as demonstrations, lectures, speeches, reports, and more.

It serves a variety of purposes, making presentations powerful tools for convincing and teaching.

20\$

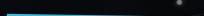
MONTHLY

30\$

MONTHLY

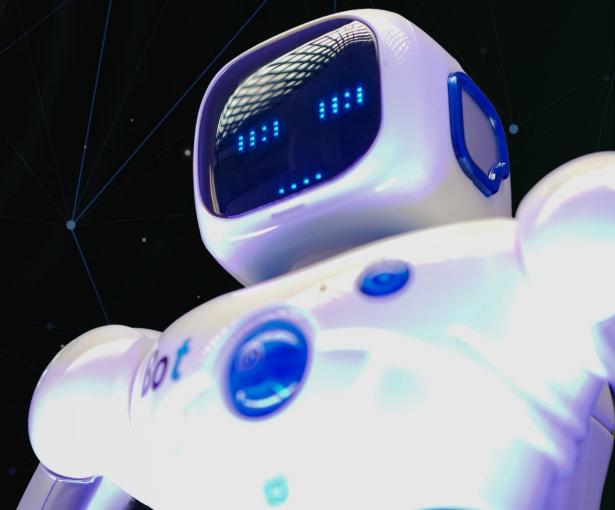
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YEARLY



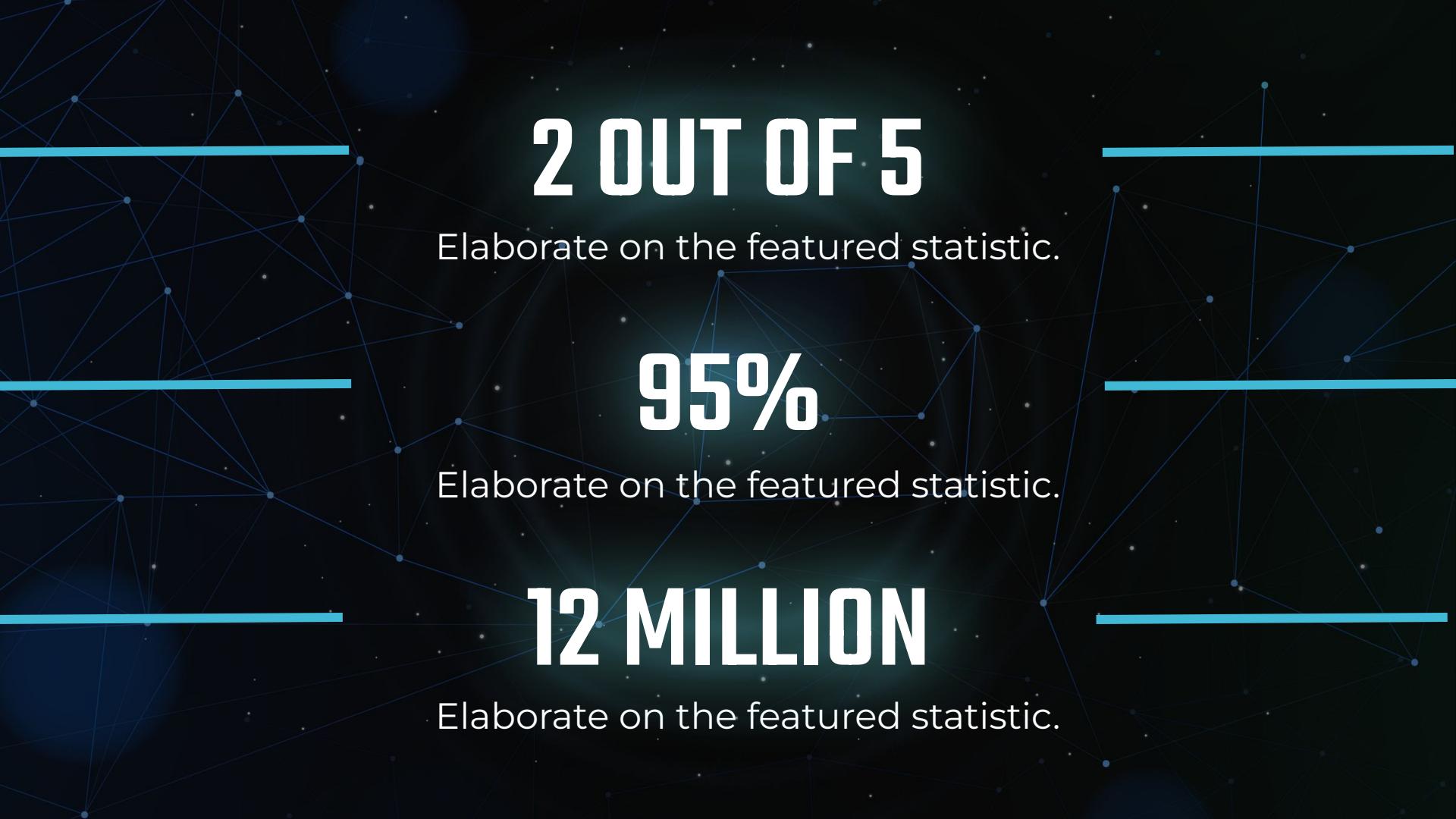
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ADD A PRICING PAGE



123,456,789

Elaborate on the featured statistic.



2 OUT OF 5

Elaborate on the featured statistic.

95%

Elaborate on the featured statistic.

12 MILLION

Elaborate on the featured statistic.

INFOGRAPHIC SLIDE REPORT

Elaborate on the
featured statistic.



Elaborate on the
featured statistic.



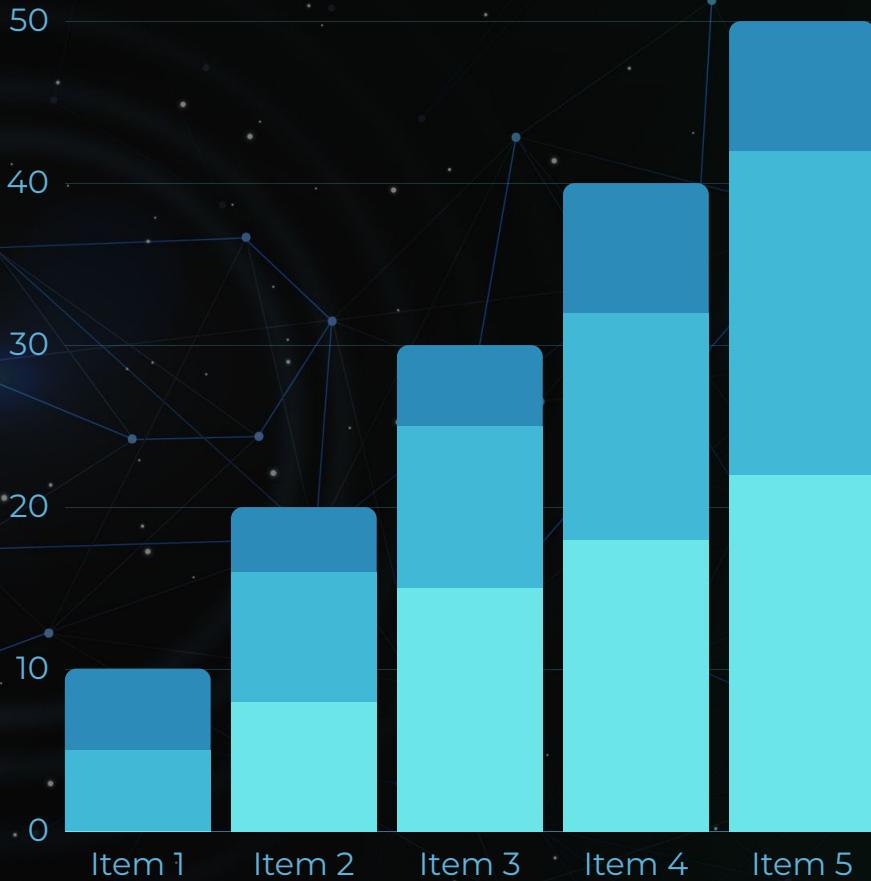
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featured statistic.



Elaborate on the featured statistic

WRITE YOUR TOPIC OR IDEA

Elaborate on the
featured statistic.



ADD A TIMELINE PAGE

Add a main point

Elaborate on what you want to discuss.

Add a main point

Elaborate on what you want to discuss.

Add a main point

Elaborate on what you want to discuss.

Add a main point

Elaborate on what you want to discuss.

S

STRENGTHS

- What are you doing well?
- What sets you apart?
- What are your good qualities?

W

WEAKNESSES

- Where do you need to improve?
- Are resources adequate?
- What do others do better than you?

O

OPPORTUNITIES

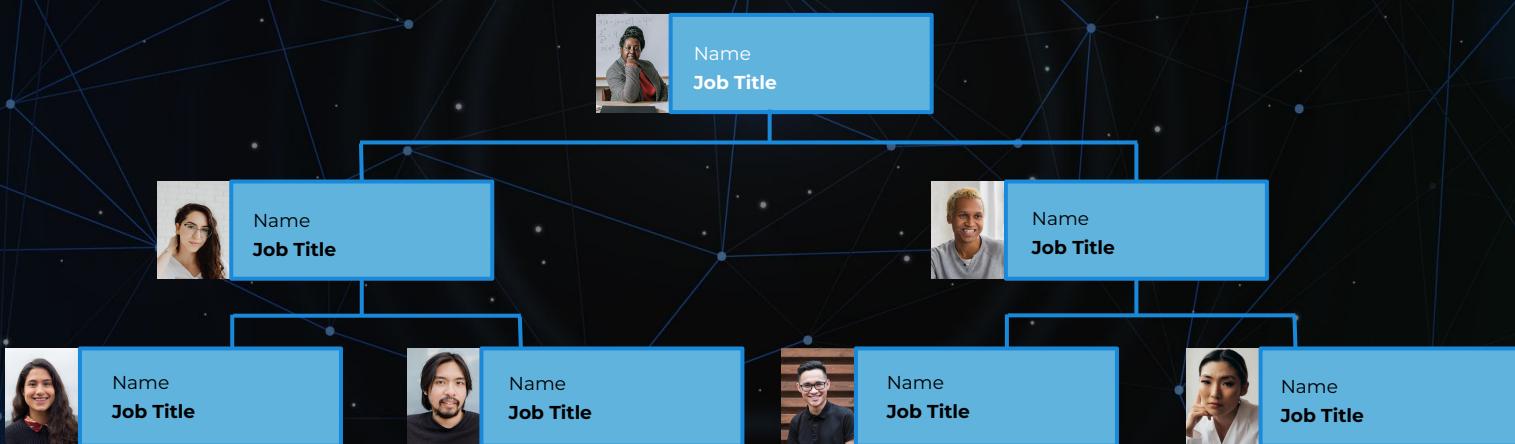
- What are your goals?
- Are demands shifting?
- How can it be improved?

T

THREATS

- What are the blockers you're facing?
- What are factors outside of your control?

ooo ADD A CHART PAGE ooo



CONTACT US

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THANK YOU!

Write a closing statement or
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