

The background of the slide is a dense, repeating pattern of various cryptocurrency logos and symbols. These include Bitcoin (BTC), Ethereum (ETH), Litecoin (LTC), Dogecoin (DOGE), and many others, each rendered in a circular or coin-like format. The logos are in various colors and designs, creating a vibrant and thematic backdrop for the text.

COMMUNITY OF CRYPTOCURRENCY

A study of the differences and similarities within and between online cryptocurrency communities using natural language processing techniques
Main research question: What are the social and cultural differences between the online communities of r/bitcoin and r/ethereum?

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RESEARCH QUESTIONS

- Two sub-questions:
 - Macro analysis that studies the difference in topics between the two communities:
 - Are the values of the founders and maintainers of individual coins obvious in the discussions in these coin communities? If so, how?
 - Micro analysis that looks at individual posts to see how individual affiliation and belief vary across and within cryptocurrency communities
 - Overall community
 - Individuals engaged in specific discussions

DATA

- What?
 - Reddit post data from r/bitcoin and r/Ethereum
 - Collected using PSAW (wrapper for the PushShift API)
- When?
 - Part 1 (Topics): July 2015 – December 2018, split into two chunks
 - Part 2 (Affiliation): January 2014 – December 2018
- How much?

Subreddit	# Posts	# Tokens	# Characters	Avg Tokens Per Post
r/Bitcoin				
Q32015-Q42016	19128	2167896	10109673	113.34
Q12017-Q42018	80816	10074037	46434109	124.65
Q32015-Q42016	7709	930062	4367778	120.65
Q12017-Q42018	13138	2359031	11102099	179.56

METHODS

- Part 1: How do topics differ between the communities? Is there a change over time?
 - Use topic modeling (Latent Dirichlet Allocation) in `gensim` library in python
 - Compare two time periods: pre-2017 and post-2017 (to look at effect of market activity)
- Part 2: How do individuals' affiliations with different online communities vary within the general cryptocurrency population and based on engagement in topics of discussion
 - Find posts that contain keywords about important topics
 - Using sentiment analysis in `TextBlob` (bag-of-words) and `NLTK` (naïve Bayes classifier) to find people with extreme sentiment towards these topics
 - Find affiliation with other subreddits (operationalized by posting on other subreddits during the same time period)

RESEARCH PART I

- Topics classified as follows:

Time Period	Topic #	Bitcoin Topic	Ethereum Topic
Q32015-Q42016	1	Mining	Exchange/Platform
	2	Market	Transaction
	3	Transaction	Technology
	4	Market	Decentralization/Community
	5	Transaction	Platform
	6	Mining	Transaction
	7	Trading	Mining
	8	Technology	Security/Technology
	9	Transaction	Transaction
	10	General Bitcoin	Technology
Q12017-Q42018	1	Markets	Transaction
	2	Mining Community	Security/Technology
	3	Trading/Business	Exchange
	4	Time	Community
	5	Mining	Technology/Transaction
	6	Market	Transaction/Platform
	7	Mobile Exchange	Technology Communication
	8	Trading Transaction	Community/Conferences
	9	Market/Trading	Community
	10	Exchange/Transaction	Technology

- Found that Bitcoin topics were much more focused on trading and markets, whereas Ethereum topics were much more focused on technology
- Topics changed and diverged over time

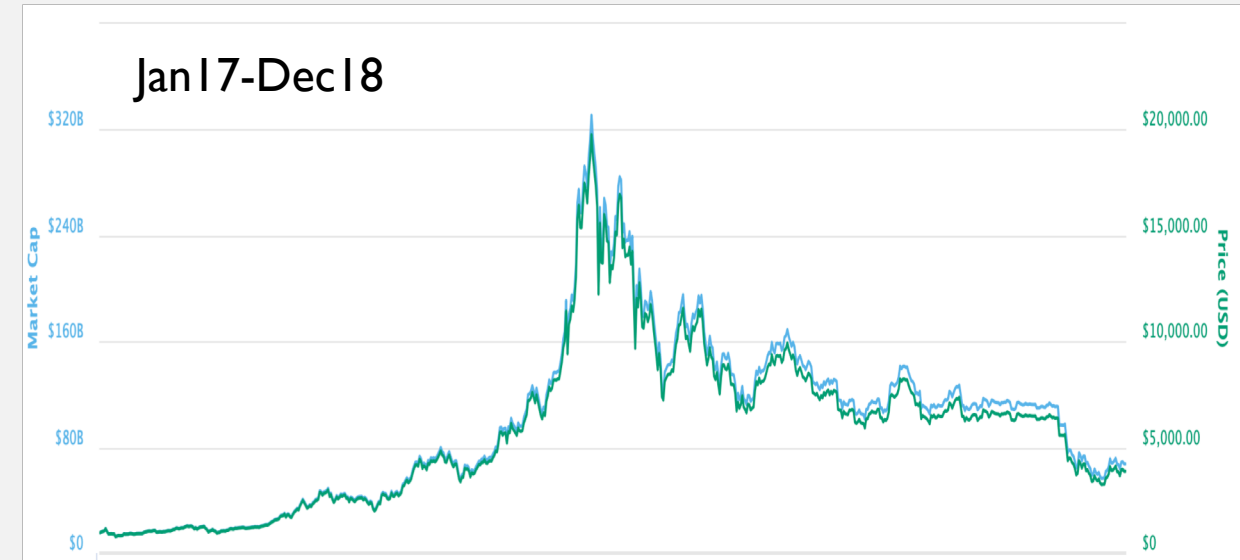
DIFFERENCE IN BITCOIN FOCUS (MARKETS/TRADING) AND ETHEREUM FOCUS (TECHNOLOGY): WHY?

- Differences represent values of founders/maintainers:
 - Bitcoin: focus is on the coin and maintaining its tradability
 - Ethereum: means to realizing a technological platform – the founders “considered Ethereum to simply be fuel for the operation and build-out of the Ethereum platform” ([TheStreet](#), 2018)

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CHANGE OVER TIME COINCIDE WITH MARKET VOLATILITY?

BITCOIN PRICE



source: coinmarketcap

- Over time, Bitcoin topics became more market and exchange focused
- Maybe market focus in topics is related to greater volatility and growth Bitcoin
 - Bitcoin quadrupled from Oct-Dec 2017: \$4,300-\$19,900
 - Interestingly, ethereum only doubled in the same time period

RESEARCH PART 2: MORE GRANULAR ANALYSIS OF AFFILIATION

- What are the affiliations of posters from r/Bitcoin and r/Ethereum, and how do they differ?
 - Affiliation operationalized by posting on another subreddit in the five year period studied.
- Interesting findings:
 - Ethereum members were generally more active in other cryptocurrency communities
 - Even though the involvement in highly popular subreddits was the same
 - Surprisingly, though topic modeling showed a difference in technological involvement, this analysis shows the same level across communities

Subreddit	% r/Bitcoin	% r/ethereum
AskReddit	20.6	19.68
CryptoCurrency	19.11	35.82
btc	11.98	19.06
funny	11.52	10.93
Showerthoughts	11.25	11.6
ethereum	9.01	0
pics	8.69	8.08
videos	8.3	8.35
gaming	8.26	7.99
explainlikeimfive	7.37	6.92
personalfinance	6.95	7.16
askscience	6.85	7.34
buildapc	6.82	7.26
litecoin	6.64	9.6
techsupport	6.27	6.49
aww	5.89	5.69
ethtrader	5.68	34.09
todayilearned	5.55	5.78
dogecoin	5.41	6.94
BitcoinMarkets	5.32	7.3
mildlyinteresting	5.17	4.6
pcmasterrace	5.14	5.02
legaladvice	4.82	4.55
The_Donald	4.77	4.92
Music	4.73	4.74
trees	4.63	3.36
news	4.38	4.31
Fitness	4.03	4.13
CircleofTrust	4.01	4.26
CryptoMarkets	4.0	9.35

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CONCLUSION

- The cryptocurrency community is not monolithic
 - LDA results show differences between the communities' values
 - Affiliation varies between the populations
- Applying this type of analysis to other coin communities might help researchers better understand this confusing subject
 - Classify coins into “types”
 - Better understand the level of diversity across similar communities
 - Understand what drives price movements in different communities
 - Understand what cryptocurrencies are – technology? currency? investment?