

# Blockchain Literature Review Process

To master the current situation and trend of Blockchain and its security research in recent years, based on the above research questions, we carry out a literature review in the field of blockchain and its security[1].

The whole process can be divided into six stages: pre-preparing, data getting, data preprocessing, data filtering, data analysis, and data visualization, as shown in Figure 1.

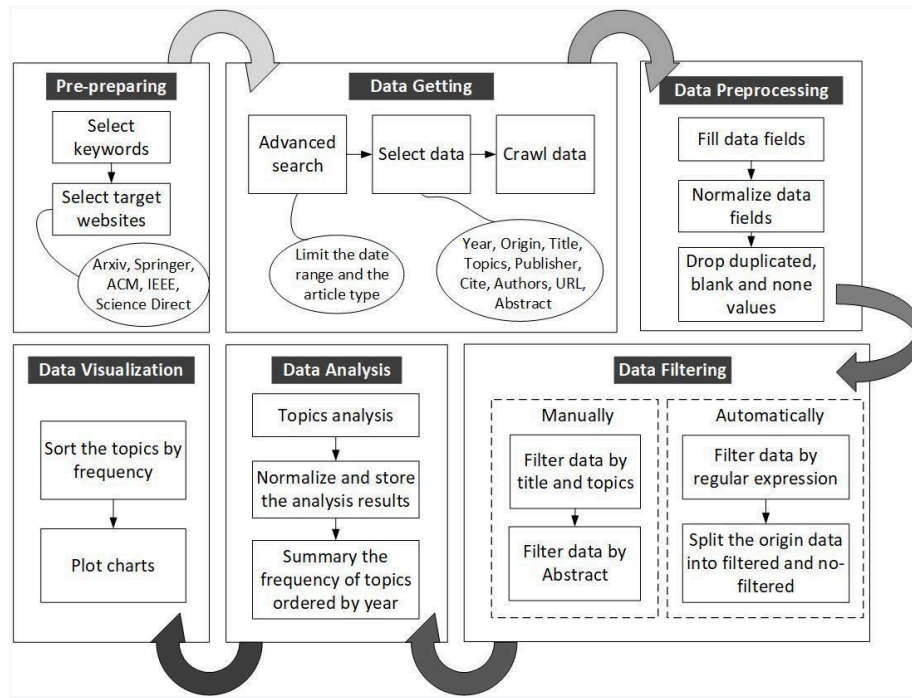


Figure 1

In the pre-preparing stage, the keywords used for searching blockchain and its security literature are shown in Figure 2. And when search blockchain security literature, we used the NOT conjunction to exclude the blockchain survey to get more specific results.

In the data getting stage, we make some limitations on the data through the advanced search, including year, language, and literature type. We set the date range of both survey and security articles for 2014-2020 (In 2014, Ethereum issued the first smart contract running on the blockchain). The language of the articles is limited for English, and the type of literature are limited for conference or journal.

	Keyword	Filter Rules	
		Inclusion	Exclusion
<b>Survey</b>	Abstract:(Blockchain OR Cryptocurrency OR Consensus OR Contract) AND Title:(Survey OR Review OR Tutorial OR Overview)	The article should be an overview of a specific aspect of blockchain technology, distributed ledger technology, digital currency, or blockchain technology.	The articles should not merely introduce the specific applications based on blockchain technology.
<b>Security</b>	Abstract:(Bitcoin OR Ethereum OR Contract OR Blockchain OR (Distributed AND Ledger)) AND Abstract:(Security OR Risk OR Threat OR Challenge OR Attack OR Vulnerability) AND NOT Title:(Survey OR Overview OR Review OR Tutorial)	The articles should introduce the security issues of blockchain technology, blockchain platform, distributed ledger technology, including threats, attacks, risks and countermeasures, etc.	The articles should not be a survey.

Figure 2

In the manually filtering stage of the filtering stage, we set two-directions filtering rules for the articles about the blockchain survey and blockchain security, as shown in Table 1, to obtain the most required references as possible.

The origin and filtered data distribution are shown in Figure 3.

Survey Statistic (Until 2020/08/31)								
	2014	2015	2016	2017	2018	2019	2020	Total
ACM	0	0	1	2	19	18	19	59
Arxiv	2	6	16	27	100	168	136	455
IEEE	0	0	4	13	39	116	56	228
Science Direct	0	0	0	0	4	24	50	78
Springer	0	4	23	40	197	420	360	1044
Total	2	10	44	82	359	746	621	1864
Survey Statistic Filtered (Until 2020/08/31)								
	2014	2015	2016	2017	2018	2019	2020	Total
ACM	0	0	0	0	9	12	9	30
Arxiv	0	0	0	3	13	37	28	81
IEEE	0	0	2	9	25	70	31	137
Science Direct	0	0	0	0	2	12	29	43
Springer	0	0	4	16	49	137	123	329
Total	0	0	6	28	98	268	220	620

Security Statistic (Until 2020/10/23)								
	2014	2015	2016	2017	2018	2019	2020	Total
ACM	3	4	6	17	27	53	42	152
Arxiv	0	0	4	10	38	52	36	140
IEEE	1	1	1	29	123	226	146	527
Science Direct	1	0	0	2	11	38	58	110
Springer	12	11	25	37	146	248	203	682
Total	17	16	36	95	345	617	485	1611
Security Statistic Filtered (Until 2020/10/23)								
	2014	2015	2016	2017	2018	2019	2020	Total
ACM	2	2	2	8	8	17	17	56
Arxiv	0	0	1	1	2	12	8	24
IEEE	0	1	0	6	37	67	27	138
Science Direct	0	0	0	0	0	3	4	7
Springer	2	0	3	6	7	20	12	50
Total	4	3	6	21	54	119	68	275

Figure 3

## References

[1] Jianhui Zhang, Doing Blockchain Survey and Analysis Automatically. 2021.

Accessed: Aug. 04, 2021. [Online]. Available:

<https://github.com/luvu/blockchain-survey>