

Recent Trends in Computer Sciences: A Bibliometric Analysis

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Abstract

Purpose: This study provides a bibliometric mapping of the Computer Science (CS) landscape from 2012–2021.

Methodology: The term, “Computer Science” was used as a topic for search in the Web of Science core collection. There were around 44,679 results for the same but as the study was to analyse only years 2012-2021 data, so it had been refined using the publication year’s filter which found 13,560 results for analysing the data and for drawing the results. BibExcel software has also been used for analysing the results and creating citation reports.

Findings: Computer Science is the most emerging field of research as it is the youngest discipline of science. Many new technologies are coming up now-a-days, which open the gate for new researchers to do research in this discipline. Moreover, Computer Science is an inter-disciplinary scientific discipline which has foundations in many other disciplines as well, which results in a greater amount of research by overlapping two different disciplines. This study is based on the Bibliometrics analysis of Computer Science. For this purpose, data indexed in the Web of Science core collection have been collected and analyzed for years 2012-2021.

Research Limitations: It focuses on the current state and evolution of Computer Science (CS) research communities for the years 2012 to up to the end of July 2021 by analyzing Web of Science (WoS) core collection records.

Originality: Several studies have been published in literature on different aspects of bibliometrics. While bibliometric studies of CS exist, this study uniquely focuses on the post-2012 shift toward interdisciplinary applications.

Keywords: Bibliometric Mapping, Web of Science, Research Trends, Computer Science, Computer Education, Computer Engineering.

1. Introduction

Computer Science (CS) has come to study only about fifty years ago (in 1940's the first electronic digital computer was built) and is the youngest discipline among other sciences which has very different outset from other disciplines namely mathematics, physics and other similar “classic” sciences, which have their origins in the philosophy of ancient Greece. The first CS degree was introduced in Cambridge University and In India, IIT

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Kanpur was the first university to include a CS department in 1963. It is the most inter-disciplinary scientific discipline that has a foundation in a wide variety of other disciplines and has significant overlapping with them such as with physics, mathematics, and with biology.

Bibliometrics studies analyse the quantitative aspects of the production, dissemination and use of scientific information with the aim of achieving a better understanding of the mechanisms of scientific research as a social activity (Chellappandi & Vijayakumar, 2018). Bibliometrics is related to and has overlapping interests with scientometrics, informetrics and webometrics. Bibliometrics analysis works on measuring scientific productivity and examines various other aspects of scholarly works. These examinations and evaluation of research works may help decision makers and policy makers of any academic institution in their decision making and policy planning process. Any research article has various parameters such as authors, number and type of documents, collaboration patterns of country and institution, citation analysis, average citations per paper, co-occurrence of keywords, etc. Bibliometrics studies are the best method to examine these parameters of any scholarly writing and to monitor research trends.

2. Review of Related Literature

There have been several studies related to the topic 'Bibliometrics'. However, the researcher has selected only some of the latest literature which has been published in the year 2021. Afolabi, Ayo and Odetunmibi (2021) have analysed the performance on computing in Nigeria universities. They found that for improving the quality and quantity of its performance, there is a need for research network applications by which platform researchers can share their ideas. They have examined the co-authorship network properties of CS department, Covenant University. They concluded that social network analysis is the useful source of information for acquiring the different centrality values of researchers in CS. Ashiq et. al. (2021) used bibliometric analysis in investigating top journals, authors, affiliations, countries, collaboration patterns, highly cited articles and library service quality (LSQ). They have selected 341 Scopus records and 212 Web of Science records for analysis (1972-1920). Their study resulted that highest number of publications was in the year 2019 i.e. 29 publications; USA has most productive authors, organizations and author collaborations; Cook C, Thompson B. and Heath F. of The Texas A&M University in Texas, USA are the most productive authors and this organization was the most productive one; the top most journal is *The Performance Measurement and Metrics Journal*, etc. Nurzhanov et. al. (2021) conducted a content analysis on research and trends in computer and educational technologies during the period 2016-2020 based on years, authors, citations, document type, keywords, publication source, sponsors and language. They have examined 1,798 articles based on the keywords related to 'computer' and 'educational technologies' from the Scopus database. They found that the minimum year was 2016 with 74 articles and the maximum was in 2020 with 2,814. The highest source title was 'Turkish Online Journal of Educational Technology' with 106 publications. Top funding agencies were the 'National Science Foundation' with 49 financial sponsorships. Xia et. al. (2021) has analyzed and collected data from Scopus and SciVal databases for the detection of

research fronts of CS. They have made scientometric analyses. Their macro analysis is based on scholarly output and citation count of top countries and institutions and micro analysis focuses on the institution's performance and their competitors in research fronts. They have found that China is the most productive country in the field of CS research. Other government research institutions such as CNRS, RIKEN and CSIRO are leading in related hot topics.

3. Objectives of the Study

The specific research objectives of the study are as follows:

- i) To compare various computer science research areas as categorized within the Web of Science.
- ii) To aggregate and analyze data regarding publication trends, document types, authorship patterns, and geographic/institutional distributions.
- iii) To identify top-performing authors, publication titles, and funding agencies.
- iv) To evaluate frequently used keywords, dominant research topics, and year-wise citation metrics to establish impact.

4. Methodology

The data for this bibliometric study were retrieved from the Web of Science (WoS) Core Collection. The search was executed using the keyword "Computer Science" within the "Topic" field, which initially yielded a total of 44,679 records. To maintain the study's focus on contemporary trends, the dataset was refined by applying a temporal filter for the decade spanning 2012 to 2021. This refinement resulted in a final sample of 13,560 documents. Bibliometric indicators and citation reports were subsequently generated and analyzed using BibExcel software. Following the methodology established by Garg & Kavita (2015), this study employs frequency distribution and complete counting to ensure all contributing institutions are accurately credited.

Web of Science's "Topic" search significantly undercounts field output by scanning only for the specific phrase "Computer Science." While the field produces hundreds of thousands of papers annually, this method captures only 13,560 results over a decade. By ignoring specific technical terms like "Neural Networks" or "Blockchain," the data skews heavily toward "Computer Science Education" - the only subfield consistently using the broad category name in its metadata.

5. Result

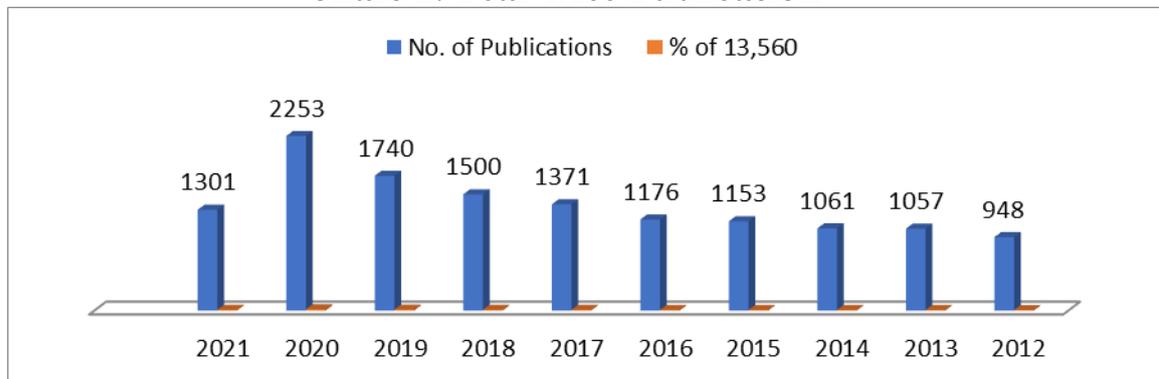
a) Different Categories of Computer Science: Table 1 shows different categories in which Computer Science is used. These categories are mentioned in the Web of Science Core Collection. Education Educational Research has the highest number of documents which are 1305 documents (9.62%) of 13,560. Computer Science Interdisciplinary Applications comes second with 1210 documents (8.92%) followed by Computer Science Information Systems with 1175 documents (8.66%). Multidisciplinary Sciences has the least number of documents which are 592 documents (4.36 %).

Table 1: Different Categories of Computer Science

S.No.	Web of Science Categories	Record Count	% of 13,560
1	Education Educational Research	1305	9.62
2	Computer Science Interdisciplinary Applications	1210	8.92
3	Computer Science Information Systems	1175	8.66
4	Engineering Electrical Electronic	1045	7.70
5	Computer Science Theory Methods	1036	7.64
6	Education Scientific Disciplines	848	6.25
7	Computer Science Artificial Intelligence	812	5.98
8	Computer Science Software Engineering	800	5.89
9	Information Science Library Science	606	4.46
10	Multidisciplinary Sciences	592	4.36

b) Year wise Publications: Chart 1 shows general status of publications over years. When it is analysed year-wise publications from 2012-2021, it is found that there is an increase in the number of publications every year. There were 948 publications in 2012 (6.99%) which increases to 2253 publications in 2020 (16.61%).

Chart 1: Year-Wise Publication



c) Year wise Citations: Table 2 gives information about many things such as total number of citations, average citations per paper and h-index found according to year of publications. There are 211117 citations and from that it has been found that 2012 has maximum number citations (50,462) with 53.23 average citations per paper and 76 h-index. Year 2013 has a maximum h-index which is 77 and 29,347 citations and 27.76 average citations per paper. Year 2020 has only 6,999 citations, 3.11 average citations per paper and 31 h-index. It is in second last position in terms of citations.

Table 2: Publication Year wise Total Citations

S.No.	Publication Year	Total No. of Citations	Average Citations per Paper	h-index
1	2012	50,462	53.23	76
2	2013	29,347	27.76	77
3	2014	24,973	23.54	71
4	2015	25,227	21.88	69

5	2016	22,641	19.24	64
6	2017	23,399	17.07	62
7	2018	18,761	12.51	60
8	2019	12,432	7.14	40
9	2020	6,999	3.11	31
10	2021	810	0.60	10

d) Document Type and Their Count: Table 3 shows different types of documents in the field of computer science. It is clear from the table that every type has a different number of documents. Articles have the highest number of documents which is 11197 (82.57%) followed by review articles with 1722 documents (12.69%). and editorial meetings, 479 documents (3.53%).

Table 3: Document Types and Their Count

S.No.	Document Types	No. of Documents	% of 13,560
1	Articles	11197	82.57
2	Review Articles	1722	12.69
3	Editorial Materials	479	3.53
4	Proceedings Papers	295	2.17
5	Early Access	294	2.16
6	Book Chapters	63	0.46
7	Book Reviews	55	0.40
8	News Items	27	0.19
9	Meeting Abstracts	22	0.16
10	Corrections	19	0.14

e) Type of Document-wise Total Number of Citations: Table 5 is about the total number of citations according to the type of documents. There are 211117 total citations according to document type. Among these types, Articles have a maximum number of total citations 158901 (75.26%), followed by Review Articles 45527 (21.56%), proceeding papers with 2864 total citations (1.35%). Among these results, Meeting Abstracts has the least number of total citations which is only 3 (0.001%).

Table 4: Type of Document-wise Total Number of Citations

S.No.	Document Types	Total No. of Citations	Percentage of 211117
1	Articles	158901	75.260
2	Review Articles	45527	21.560
3	Proceedings Papers	2864	1.35
4	Editorial Materials	2074	0.980
5	Book Chapters	1114	0.520
6	Early Access	83	0.030
7	News Items	53	0.025
8	Book Reviews	13	0.006
9	Meeting Abstracts	3	0.001
10	Others	485	0.220

f) Language-wise Documents: It is evident from Table 5 that the language of most of the document is English which covers 13294 documents

(98.03%). After English, topmost languages are German which covers 64 documents (0.47%) followed by Spanish which covers 51 documents (0.37%)

Table 5: Documents on Top Languages

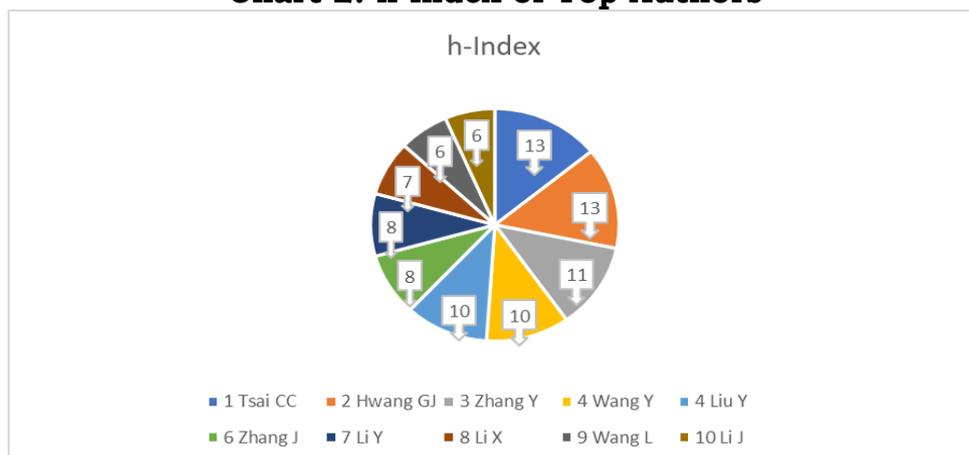
S.No.	Languages	No. of Documents	% of 13,560
1	English	13294	98.03
2	German	64	0.47
3	Spanish	51	0.37
4	Portuguese	37	0.27
5	Chinese	28	0.20
6	Russian	24	0.17
7	French	21	0.15
8	Hungarian	9	0.06
9	Turkish	8	0.05
10	Polish	7	0.05

g) Author Wise Documents and h-Index: Table 6 indicates that author Zhang Y has contributed the most with the highest number of documents which are 47 documents (0.34%). Zhang J is the second topmost author with 34 documents (0.25%) and third is Wang Y with 32 documents (0.23%). Among these 10 authors, Li X has contributed the least with only 22 documents (0.16%) only.

Table 6: Top Authors

S.No.	Authors	No. of Documents	% of 13,560	h-Index
1	Zhang Y	47	0.34	11
2	Zhang J	34	0.25	8
3	Wang Y	32	0.23	10
4	Liu Y	30	0.22	10
5	Tsai CC	29	0.21	13
6	Li Y	27	0.19	8
7	Hwang GJ	26	0.19	13
8	Wang L	24	0.17	6
9	Li J	23	0.16	6
10	Li X	22	0.16	7

Chart 2: h-index of Top Authors



h-index (Hirsch index) measures both productivity and impact of a particular researcher or author, or a group of researchers such as a departmental group rather than a journal. From the analysis, Tsai CC and Hwang GJ have a maximum number with 13 h-index each. Then, Zhang Y is in second position having 11 h-index. Wang L. and Li J. have the least h-index which is 6 each.

h) Year wise citations of Authors: Table 7 gives us information about year-wise citations of top 10 authors. According to the table, we can see that Hwang GJ has a maximum number of citations which is 852 with average citations per year is 85.2. Second is Zhang Y, who has 761 numbers of citations and 76.1 average citations per year. LIU Y is at third position having 737 number citations and 73.7 average citations per year. Among these 10 authors, Wang L has the least number of citations which is only 99 with 12.3 average citations per year.

Table 7: Year-wise Total Number of Citations of Authors

Authors	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total No. of Citations	Average Citations Per Year
Hwang GJ	3	17	53	75	84	106	110	151	154	99	852	85.2
Zhang Y	4	14	7	17	81	73	101	139	198	127	761	76.1
Tsai CC	3	16	42	55	66	92	93	139	146	85	737	73.7
LIU Y	0	1	6	11	18	33	110	173	189	118	659	73.2
Wang Y	3	7	24	52	59	72	82	114	185	124	723	72.3
Zhang J	0	0	1	2	10	22	25	64	129	100	353	44.1
LI Y	0	0	3	8	8	9	23	65	107	90	313	39.1
LI X	0	0	0	0	3	6	8	15	42	59	133	22.1
LI J	0	5	13	5	23	11	28	24	33	21	163	18.1
Wang L	0	0	4	4	2	9	6	10	30	34	99	12.3

i) Institutions-wise Affiliations: Table 8 shows a total 8365 Universities have contributed 13,650 articles of computer science. Table 9 gives an idea of analysis related to the institution, i.e., topmost affiliations. From the analysis, it is found that the University of California System has given the highest number of articles which are 481 articles (3.54%) of 13,560. Centre National De La Recherche Scientifique CNRS is the second most affiliation with 278 articles (2.05%). University of London is third most affiliation which has produced 241 articles (1.77%) whereas University of North Carolina has the lowest affiliation, i.e., 150 articles (1.10%) only.

Table 8: Top Affiliations

Sl.No.	Affiliations	No. of Records	% of 13,560	Total Citations
1	University of California System	481	3.54	34732
2	Centre National De La Recherche Scientifique CNRS	278	2.05	5616
3	University of London	241	1.77	6111
4	Chinese Academy of Sciences	195	1.43	2395
5	Harvard University	190	1.40	4832
6	United States Department of Energy Doe	170	1.25	24583
7	Pennsylvania Commonwealth System of Higher Education	161	1.18	3771

8	University of Texas System	159	1.17	2377
9	State University System of Florida	151	1.11	2584
10	University of North Carolina	150	1.10	2905

j) Journal wise Top Publications: Table 9 is related to the publication titles. There are a total 3875 publication titles of computer science in the Web of science core collection. Out of these, only top 10 titles have been analyzed and found that IEEE journals are the leading journals in this discipline. IEEE Access has the highest number of articles which are 254 (1.87%). Computer Education is the second leading one with 175 articles (1.29%) and Scientometrics journals is the third topmost journal with 165 articles (1.21%).

Table 9: Top Publication Titles

S.No.	Publication Titles (Journals)	No. Of Documents	% of 13,560
1	IEEE Access	254	1.87
2	Computers Education	175	1.29
3	Scientometrics	165	1.21
4	PLOS One	128	0.94
5	ACM Transactions on Computing Education	117	0.86
6	Journal of Chemical Education	115	0.84
7	Computer Applications in Engineering Education	110	0.81
8	Medicine	97	0.71
9	Journal of Science Education and Technology	95	0.70
10	Communications of the ACM	88	0.64

k) Year-wise Citations of Top Journals: Table 10 gives an idea of year-wise citations of top 10 Journals. According to it, the topmost Journal is Computer Education which has 6794 citations (Average 679.4) during 2012-2021, followed by PLOS One with 2331 citations (Average 233.1) and Scientometrics with 1662 citations (Average 166.2). Medicine has the least 303 citations (Average 30.3) only.

Table 10: Year-wise Total Citations of Top Journals

Publication Titles	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Grand Total	Average Citations Per Year
Computers Education	17	84	21	33	48	75	96	13	15	98	6794	679.4
PLOS One	3	34	77	14	26	28	34	42	46	30	2331	233.1
Scientometrics	4	8	34	66	99	15	21	35	43	28	1662	166.2
IEEE Access	0	2	12	13	24	27	78	26	50	42	1348	134.8
Journal of Science Education & Technology	10	25	52	77	86	14	17	28	32	18	1374	134.7
ACM Transactions on Computing Education	0	3	12	47	75	14	19	30	24	11	1137	113.7

Journal Of Chemical Education	0	1	15	38	56	87	90	14	23	14	814	81.4
Computer Applications in Engineering Education	1	7	8	25	30	64	92	10	14	74	551	55.1
Communications of the ACM	1	4	7	22	23	40	71	11	10	7	59	44.5
Medicine	0	0	0	0	5	35	40	62	10	0	61	30.3

1) Highly Cited Authors: Table 11 indicates that LeCun Y. is the highly cited author in 203 research papers followed by Niederkrotenthaler T. in 163 research papers and Wing JM has been cited in 159 research papers. Also, among these top 10 references, Zadeh LA is the least cited reference which is cited in 101 research papers only.

Table 11: Highly cited Authors

S. No.	Highly Cited Authors and References	Total No. of Times Cited
1.	LeCun Y, 2015, V521, P436, NATURE, DOI: 10.1038/nature14539	203
2.	Niederkrotenthaler T, 2009, V69, P1085, SOC SCI MED, DOI: 10.1371/journal.pmed.1000097 DOI: 10.1016/j.socscimed.2009.07.041 DOI: 10.1016/j.ijisu.2010.02.007 DOI: 10.1080/10640260600796234 DOI: 10.1136/bmj.b2535]	163
3.	Wing JM, 2006, V49, P33, COMMUN ACM, DOI 10.1145/1118178.1118215	159
4.	Cohen J., 1988, V2nd ed, STAT POWER ANAL BEHA,	139
5.	Hirsch JE, 2005, V102, P16569, P NATL ACAD SCI USA DOI 10.1073/pnas.0507655102	123
6.	Freedson PS, 1998, V30, P777, MED SCI SPORT EXER DOI 10.1097/00005768-199805000-00021	119
7.	Krizhevsky A., 2012, P1097, ADV NEURAL INFORM PR, DOI 10.1145/3065386	112
8.	Breiman L, 2001, V45, P5, MACH LEARN DOI 10.1023/A:1010933404324	105
9.	Papert S., 1980, MINDSTORMS CHILDREN	102
10.	Zadeh LA, 1965, V8, P338, INFORM CONTROL DOI 10.1016/S0019-9958(65)90241-X	101

m) Top Publishers: Table 12 gives information about the top publishers. It is evident from the table that Elsevier is the most leading publisher in this discipline which covers 2585 documents (19.06%). Springer Nature is the second leading publisher with 13,560 documents (17.17%) and the third topmost publisher is IEEE covering 1061 documents (7.82%).

Table 12: Top Publishers

S.No.	Publishers	Total Documents Published	% of 13,560
1	Elsevier	2585	19.06
2	Springer Nature	2329	17.17
3	IEEE	1061	7.82
4	Wiley	1016	7.49
5	Taylor & Francis	673	4.96
6	Sage	471	3.47
7	MDPI	402	2.96
8	Assoc Computing Machinery	339	2.50
9	Oxford University Press	231	1.70
10	American Chemical Society	199	1.46

n) Country/Region Related Analysis: Table 13 shows the country/region related analysis. The USA is contributing 4310 articles (31.78%) in this discipline. China contributes 1783 articles (13.14%) and England contributes 1183 articles (8.72%). India is in the tenth position contributing only 417 articles (3.07%).

Table 13: Top Countries/Regions

S.No.	Countries/Regions	Record Count	% of 13,560	Total Citations
1	USA	4310	31.78	107827
2	PEOPLES R CHINA	1783	13.14	18590
3	ENGLAND	1183	8.72	27553
4	GERMANY	1024	7.55	39371
5	SPAIN	804	5.92	11909
6	CANADA	632	4.66	12383
7	FRANCE	605	4.46	31044
8	ITALY	542	3.99	7653
9	AUSTRALIA	537	3.96	12376
10	INDIA	417	3.07	3823

o) Top Funding Agencies: Table 14 gives an idea of top 10 funding agencies in Computer Science disciplines. National Science Foundation NSF of USA is the leading funding agency which has sponsored 1121 articles (8.26%). The second and third leading funding agencies are National Natural Science Foundation NSFC of China sponsoring 901 (6.64%) and European Commission of Belgium respectively covering 651 (4.80%) respectively.

Table 14: Top Funding Agencies

S.No.	Funding Agencies	Record Count	% of 13,560
1	National Science Foundation NSF	1121	8.26
2	National Natural Science Foundation of China NSFC	901	6.64
3	European Commission	651	4.80
4	United States Department of Health Human Services	444	3.27
5	National Institutes of Health NIH USA	430	3.17
6	UK Research Innovation UKRI	348	2.56
7	Engineering Physical Sciences Research Council EPSRC	202	1.49
8	German Research Foundation DFG	184	1.35
9	Ministry Of Education Culture Sports Science And Technology Japan MEXT	170	1.25
10	United States Department of Energy DOE	161	1.18

p) Top Research Areas Related to Computer Science: As per table 15, the topmost research area is Engineering having 2200 record count (16.22%) and Education Educational Research is the second topmost research area having 1984 record count (14.63%) whereas telecommunications have the least record count, 480 (3.53%).

Table 15: Top Research Areas in Computer Science

S.No.	Research Areas	Record Count	% of 13,560
1	Engineering	2200	16.22
2	Education Educational Research	1984	14.63
3	Mathematics	1071	7.89
4	Science Technology Other Topics	875	6.45
5	Physics	702	5.17
6	Psychology	680	5.01
7	Chemistry	651	4.80
8	Information Science Library Science	606	4.46
9	Telecommunications	480	3.53

6. Major Findings

Education Educational Research is the topmost category in which the highest number of documents of computer science are published, which are 1305 documents with 9.62% of 13,560.

The year 2020 was the most productive year in which 2253 documents (16.61%) were produced. There is a steady increase in the production of documents from 2012 to 2020. The data for the year 2021 was not considered because the data for this year was taken only up to July.

In terms of total citations per year, 2012 has the maximum number of citations (50,462) with average citations per paper as 53.23. and the year 2020 has least number of total citations (6999) with average citations per paper as 3.11 only. This is because newer papers have less time to be cited.

Under document type, Articles have the maximum number of documents which is 11197 (82.57%).

Articles have the maximum number of citations, 158901 (75.26%), followed by Review Articles, 45527 (21.56%) and Proceeding Papers 2864 (1.35%).

Most of the documents are written in English covering 98.03% (13924 documents). This clearly proves that English is the most dominant and preferred language of the authors around the globe.

Zhang Y. is the most prolific author with the maximum publication in CS domain, which is 47 documents (0.34%). After Zhang Y, Zhang J is the second most prolific author who has produced 34 documents (0.25%) and Wang Y. is third with 32 publications (0.23%).

Tsai CC and Hwang GJ have maximum numbers with 13 h-index each. Then, Zhang Y is in second position having 11 h-index.

In terms of citations, Hwang GJ has the highest number of total citations (852), followed by Zhang Y (761) and Tsai CC (737) respectively.

Out of 8365 total universities producing in the field of CS, University of California System, USA is the most productive one having produced 481 articles (3.54%), followed by Centre Nationale De La Recherche Scientifique CNRS with 278 articles (2.05%) and University of London with 241 articles (1.77%).

IEEE Access Journals is the leading publication source of CS domain. IEEE Access is the topmost journal with 254 articles (1.83% of total records), followed by Computers Education with 175 articles (1.20% of total records) and Scientometrics with 165 (1.21%) respectively.

In terms of year-wise citations according to publication titles (top 10 journals), Computer Education has maximum number of citations which is 6794 (Average 679.4) followed by PLOS One 12231 citations (Average 233.1) and Scientometrics with 1662 (Average 166.2).

LeCun Y. is cited in 203 research papers, and he is the highly cited author followed by Niederkrotenthaler T., cited in 163 and Wing JM cited in 159. research papers.

Elsevier, Springer Nature and IEEE are the three topmost publishers in the CS discipline, covering 19%, 17% and 8% of total publications.

In terms of country/region related analysis, USA is the leading hub in the field of CS covering 31.78% of total publication followed by China and England. Not only these, many developing countries such as India are also doing well by entering in the list of top 10 countries by publishing 417 articles.

As far as the funding agencies are concerned, maximum number of articles 1121 articles (8.26%) is funded by National Science Foundation NSF of USA, followed by National Natural Science Foundation of China NSFC, 901 articles (6.64%) and European Commission of Belgium, 651 articles (4.80%).

Engineering is the topmost research area having 2200 record count (16.22%) and Education Educational Research is the second topmost research area with 1984 record count (14.63%) whereas telecommunications have the least record count, 480 (3.53%).

7. Conclusion

Computer Science is the most emerging field of research as it is the youngest discipline of science. Many new technologies are coming up now-a-days, which open the gate for new researchers to do research in this

discipline. Moreover, Computer Science is an inter-disciplinary scientific discipline which has foundations in many other disciplines as well, which results in a greater amount of research by overlapping two different disciplines. This study is based on the Scientometrics analysis of Computer Science. For this purpose, data indexed in the Web of Science core collection have been collected and indexed for the last 10 years (2012-2021). Year wise publications have been analyzed along with year wise citations. Top authors and their productions have also been analyzed year-wise along with total citations of top 15 authors and their h-index. Different authorship patterns, different document types and their count along with their citations, top countries affiliations, funding agencies, top publication titles along with their year-wise citations etc. have also been analyzed and presented. Various citation analyses such as total citations counts, total number of cited references and highly cited references, top research areas in CS discipline, etc. have also been examined and presented.

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