UNIVERSITÀ DEGLI STUDI DI NAPOLI FEDERICO II
ANNUAL GRIN GENERAL MEETING — DEC 12, 2023, ROME

ANALYSIS ON COMPUTER SCIENCE JOURNALS

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https://luistar.github.io

DATA COLLECTION

DATA SOURCES

Currently considering 5 data sources

Scopus®

Clarivate™
Web of Science

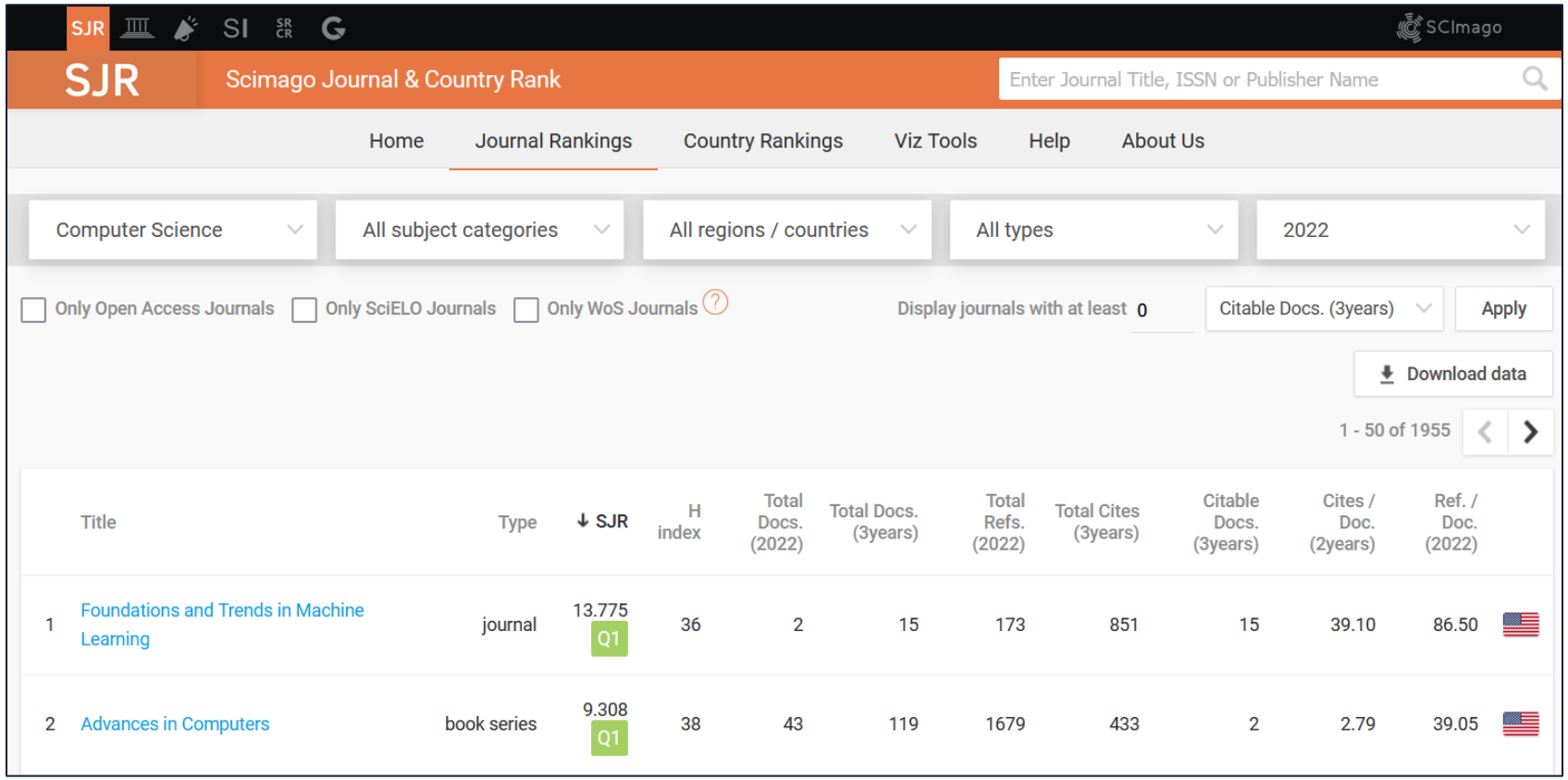
anvur vQr
GEV01 List for
VQR 2015-2019

CORE
Computing Research & Education

dblp
computer science bibliography

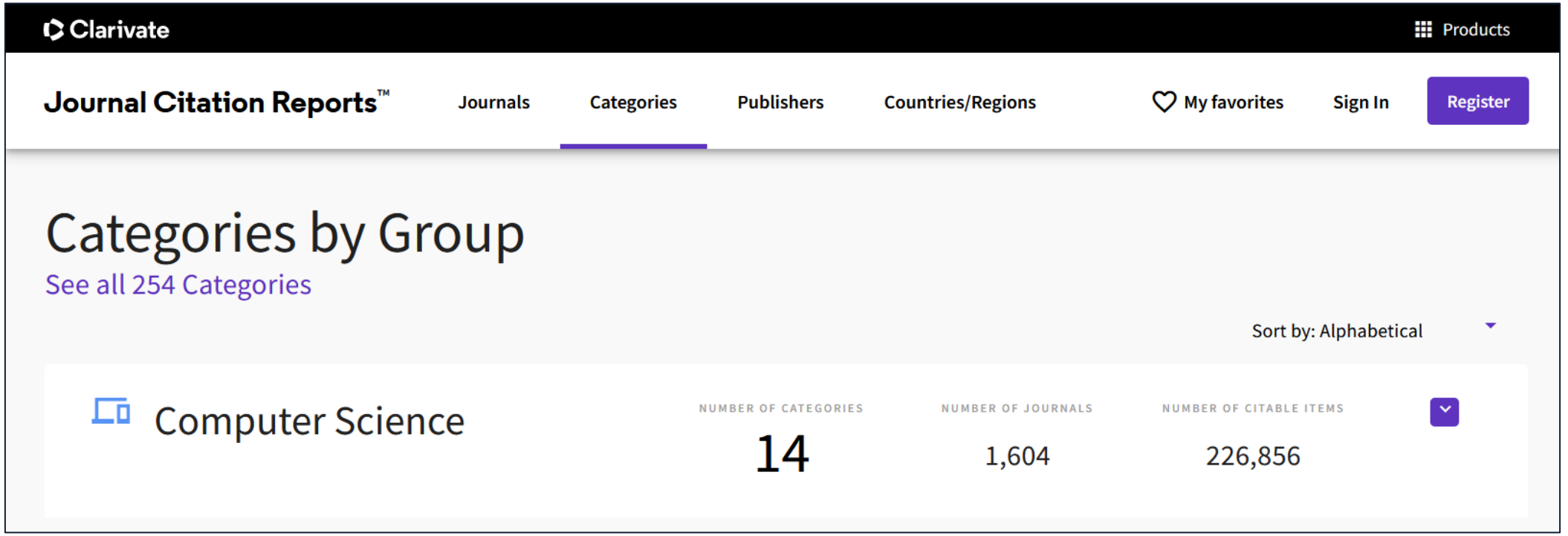
DATA COLLECTION: SCOPUS

- Downloaded Journal data for the Computer Science area
- https://www.scimagojr.com/journalrank.php?area=1700



DATA COLLECTION: CLARIVATE WoS

- No straightforward way to download all data
- Export to CSV or XLSX limited to 600 entries
- https://jcr.clarivate.com/jcr/browse-categories



DATA COLLECTION: CLARIVATE WoS

- For each of the 14 categories included in the Computer Science group, I downloaded the list of Journals

AUTOMATION & CONTROL SYSTEMS	COMPUTER SCIENCE, ARTIFICIAL INTELLIGENCE	COMPUTER SCIENCE, CYBERNETICS	COMPUTER SCIENCE, HARDWARE & ARCHITECTURE	COMPUTER SCIENCE, INFORMATION SYSTEMS
COMPUTER SCIENCE, INTERDISCIPLINARY	COMPUTER SCIENCE, SOFTWARE ENGINEERING	COMPUTER SCIENCE, THEORY & METHODS	INFORMATION SCIENCE & LIBRARY SCIENCE	LOGIC
MATHEMATICAL & COMPUTATIONAL BIOLOGY	MEDICAL INFORMATICS	RADIOLOGY, NUCLEAR MEDICINE & MEDICAL IMAGING	ROBOTICS	

DATA COLLECTION: CLARIVATE WoS

Clarivate maintains different citation indexes

- SCIE (Science Citation Index Expanded)
- SSCI (Social Sciences Citation Index)
- ESCI (Emercing Sources Citation Index)

Each of the 14 categories had journals from two indexes

- Mostly SCIE and ESCI, only *Information Science and Library Science* features SSCI and ESCI journals

- Currently we're considering **all** the journals

DATA COLLECTION: GEV01

- Converted the PDF list of computer science journals to an XLSX file

Valutazione della Qualità della Ricerca 2015-2019 (VQR 2015-2019)

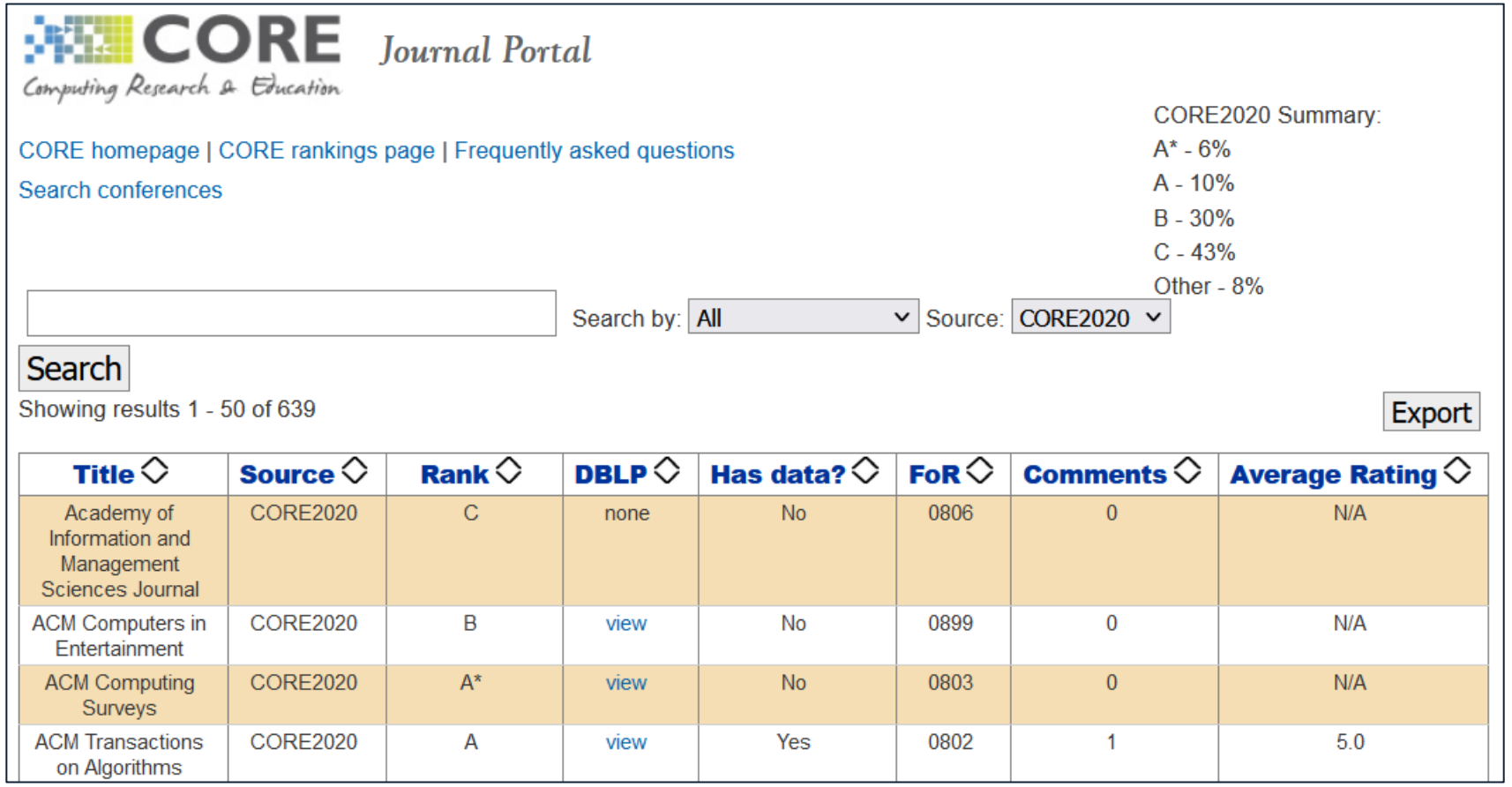
Gruppo di Esperti della Valutazione dell'Area 01 Scienze Matematiche e Informatiche (GEV01)

RIVISTE NELLA CATEGORIA DI RIFERIMENTO "INFORMATICA" (SSD INF/01)

ISSN 1	ISSN 2	Titolo
2092-6731		3D RESEARCH
1932-2232	1932-2240	ACM COMMUNICATIONS IN COMPUTER ALGEBRA
0360-0300	1557-7341	ACM COMPUTING SURVEYS
1550-4832	1550-4840	ACM JOURNAL ON EMERGING TECHNOLOGIES IN COMPUTING SYSTEMS
1551-3688		ACM SIGBED REVIEW
0362-1340	1558-1160	ACM SIGPLAN NOTICES
1936-7228		ACM TRANSACTIONS ON ACCESSIBLE COMPUTING
1549-6325	1549-6333	ACM TRANSACTIONS ON ALGORITHMS
1544-3558	1544-3965	ACM TRANSACTIONS ON APPLIED PERCEPTION
2375-4699	2375-4702	ACM TRANSACTIONS ON ASIAN AND LOW-RESOURCE LANGUAGE INFORMATION PROCESSING
1556-4665	1556-4703	ACM TRANSACTIONS ON AUTONOMOUS AND ADAPTIVE SYSTEMS
1942-3454	1942-3462	ACM TRANSACTIONS ON COMPUTATION THEORY

DATA COLLECTION: CORE

- Exported all data from the website (discontinued as of Feb 2022)



CORE Computing Research & Education — Journal Portal

CORE homepage | CORE rankings page | Frequently asked questions

Search conferences

CORE2020 Summary:
A* - 6%
A - 10%
B - 30%
C - 43%
Other - 8%

Search by: All Source: CORE2020

Search

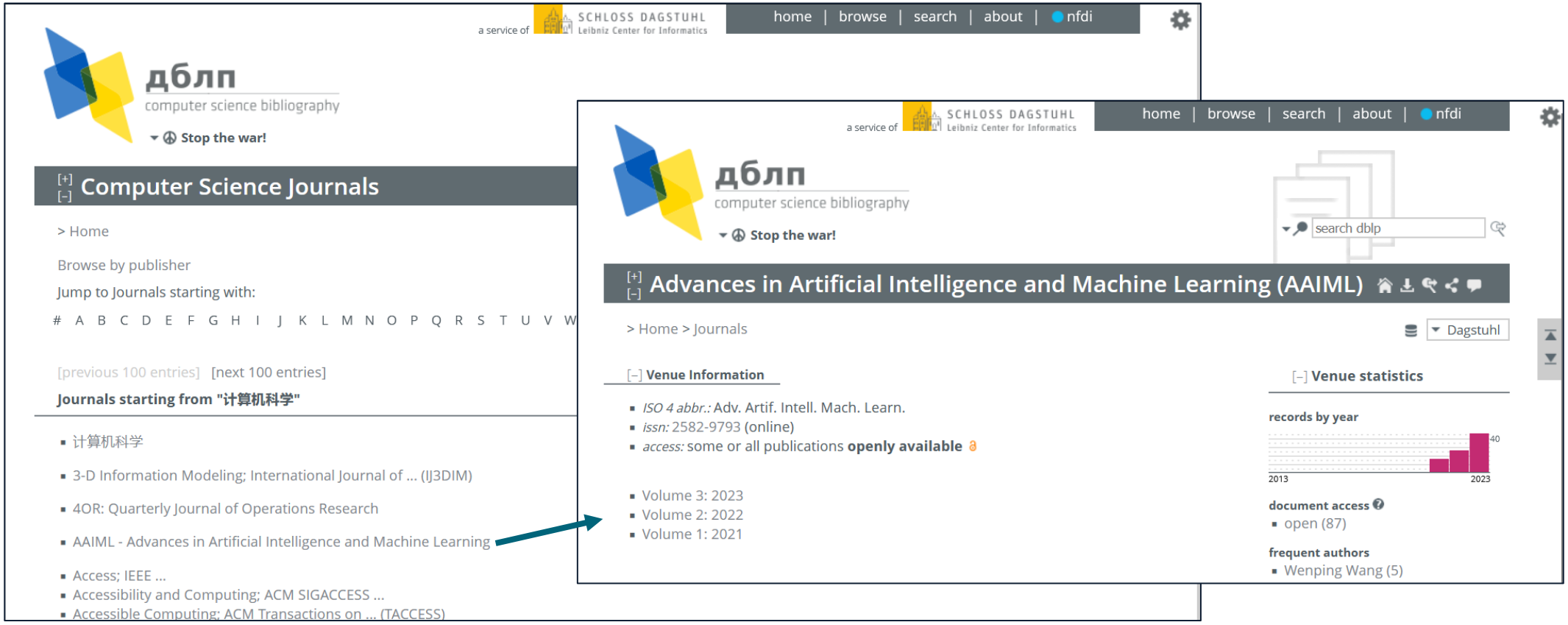
Showing results 1 - 50 of 639

Export

Title	Source	Rank	DBLP	Has data?	FoR	Comments	Average Rating
Academy of Information and Management Sciences Journal	CORE2020	C	none	No	0806	0	N/A
ACM Computers in Entertainment	CORE2020	B	view	No	0899	0	N/A
ACM Computing Surveys	CORE2020	A*	view	No	0803	0	N/A
ACM Transactions on Algorithms	CORE2020	A	view	Yes	0802	1	5.0

DATA COLLECTION: DBLP

- Collected Journal titles and ISSNs by scraping the website



DATA PREPROCESSING

DATA PREPROCESSING

- Cannot use title straight away to join source. Mismatches exist

	scimago_title	clarivate_title
1	ANNUAL REVIEW OF CONTROL, ROBOTICS, AND AUTONOMOUS SYSTEMS	ANNUAL REVIEW OF CONTROL ROBOTICS AND AUTONOMOUS SYSTEMS
2	MIS QUARTERLY: MANAGEMENT INFORMATION SYSTEMS	MIS QUARTERLY
3	IEEE TRANSACTIONS ON SYSTEMS, MAN, AND CYBERNETICS: SYSTEMS	IEEE TRANSACTIONS ON SYSTEMS MAN CYBERNETICS-SYSTEMS
4	COMPUTERS AND EDUCATION	COMPUTERS & EDUCATION
5	IEEE/CAA JOURNAL OF AUTOMATICA SINICA	IEEE-CAA JOURNAL OF AUTOMATICA SINICA
6	WILEY INTERDISCIPLINARY REVIEWS: COMPUTATIONAL MOLECULAR SCIENCE	WILEY INTERDISCIPLINARY REVIEWS-COMPUTATIONAL MOLECULAR SCIENCE
7	INFORMATION AND MANAGEMENT	INFORMATION & MANAGEMENT
8	RADIOLOGY: ARTIFICIAL INTELLIGENCE	RADIOLOGY-ARTIFICIAL INTELLIGENCE
9	WILEY INTERDISCIPLINARY REVIEWS: DATA MINING AND KNOWLEDGE DISCOV...	WILEY INTERDISCIPLINARY REVIEWS-DATA MINING AND KNOWLEDGE DISCOVERY
10	INFORMATION PROCESSING AND MANAGEMENT	INFORMATION PROCESSING & MANAGEMENT
11	IEEE/ASME TRANSACTIONS ON MECHATRONICS	IEEE-ASME TRANSACTIONS ON MECHATRONICS
12	FUTURE GENERATION COMPUTER SYSTEMS	FUTURE GENERATION COMPUTER SYSTEMS-THE INTERNATIONAL JOURNAL OF ESCIENCE
13	IEEE/ACM TRANSACTIONS ON NETWORKING	IEEE-ACM TRANSACTIONS ON NETWORKING
14	APPLIED SOFT COMPUTING JOURNAL	APPLIED SOFT COMPUTING

- (Full Outer) Joined all the data on the ISSNs

DATA PREPROCESSING

- After joining on the ISSNs, some mismatches existed for some journals
  - ARCHIVES OF CONTROL SCIENCES (WoS, GEV, Core)
  - INTERNATIONAL JOURNAL OF ADVANCED ROBOTIC SYSTEMS (All)
  - JOURNAL OF INFORMATION PROCESSING (Scimago, Gev, Core)
  - JOURNAL OF SYSTEMS ENGINEERING AND ELECTRONICS (Scimago, Clarivate)
- These journals appeared in different sources with the same title but different ISSNs
- Did a preliminary manual check and merged them

DATA COLLECTION: STATISTICS

Source	Number of Journals
Scopus (CS Area)	1834
Web of Science	1288
GEV01 – VQR 2015-2019	1143
CORE	639
DBLP	1854
Union of all sources	**3122**

JOINED DATA

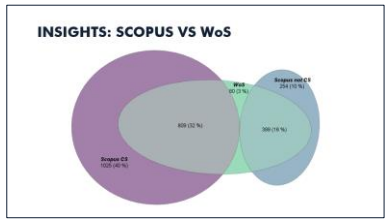
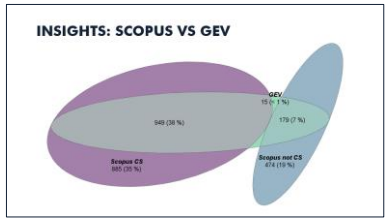
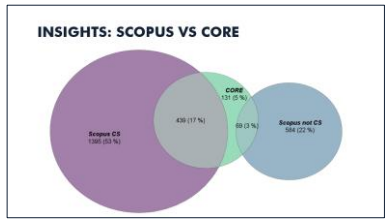
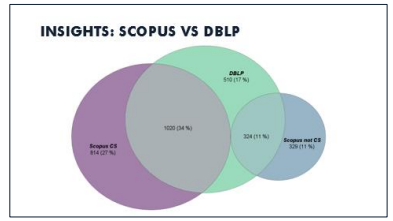
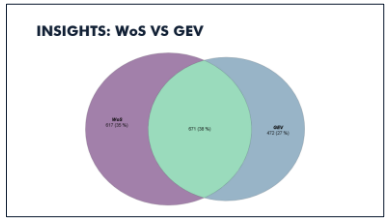
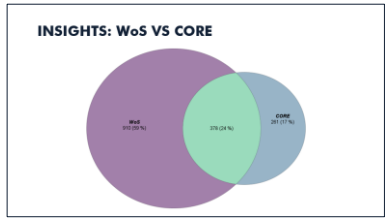
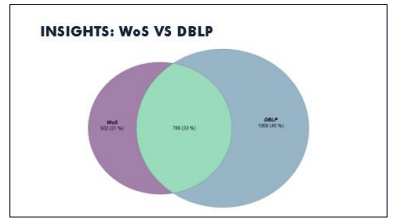
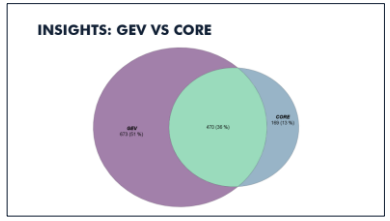
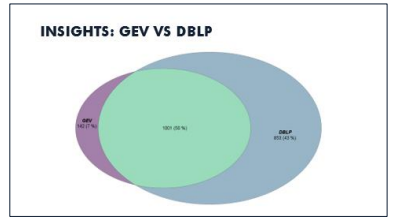
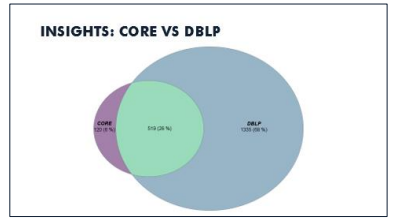
- We assigned to each journal in the union of all sources one or more labels, corresponding to the sources in which it appears
  - E.g.: a Journal appearing in CORE, GEV and DBLP gets: **core, gev, dblp**
- Furthermore, we assigned a **scimago_not_cs** label to journals that:
  1) Appear in at least one of the considered sources (except Scimago – CS area)
  2) Are indexed on Scopus, but not in the «Computer Science» area

Title	Publisher	Scopus Areas	Sources
BULLETIN OF SYMBOLIC LOGIC	Cambridge University Press	Arts and Humanities; Mathematics	clarivate, gev, dblp, scimago_not_cs
COMPUTATIONAL BIOLOGY AND CHEMISTRY	Elsevier Ltd.	Biochemistry, Genetics and Molecular Biology; Chemistry; Mathematics	clarivate, gev, dblp, scimago_not_cs
EARTH SCIENCE INFORMATICS	Springer Verlag	Earth and Planetary Sciences	clarivate, gev, dblp, scimago_not_cs

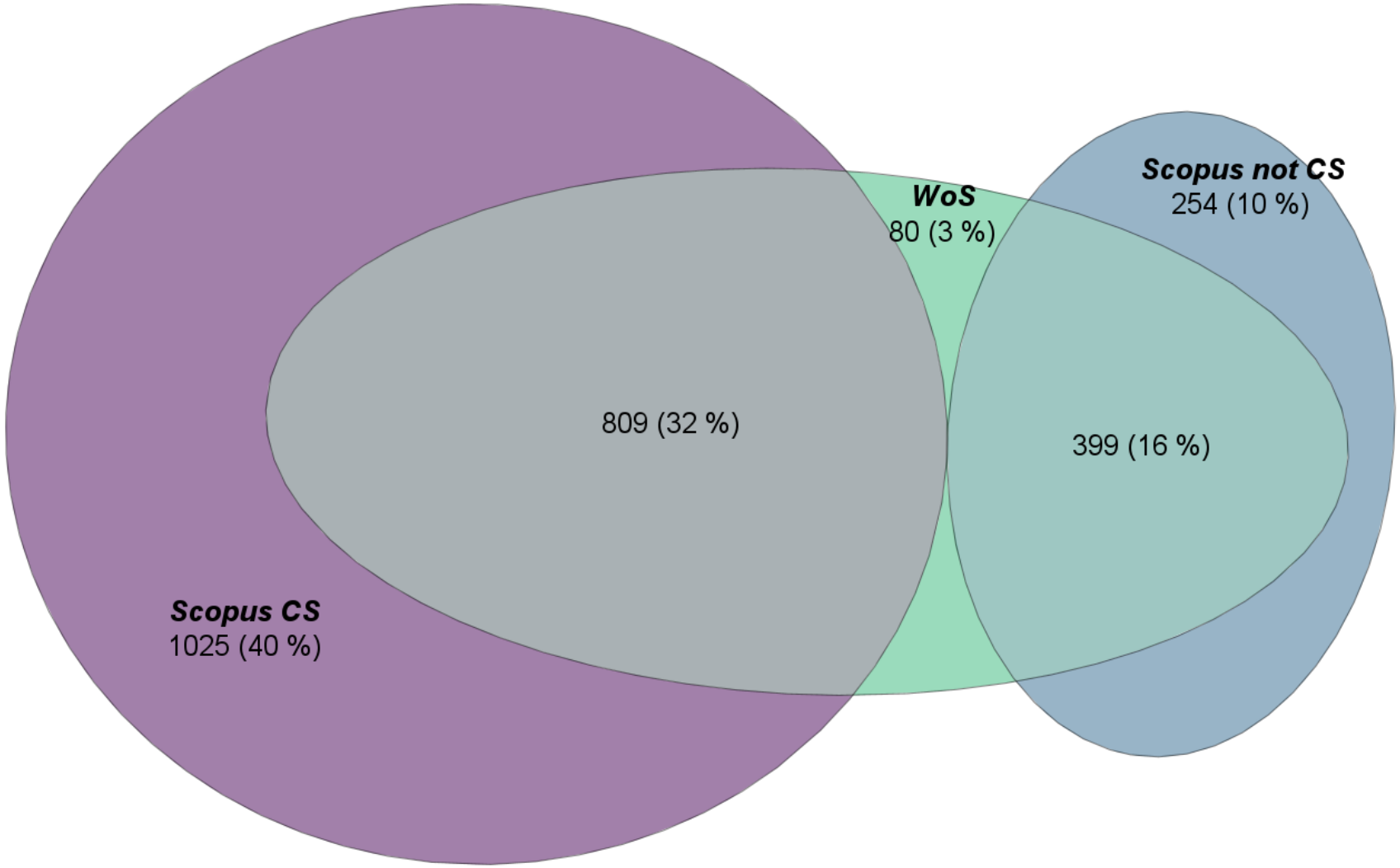
Some journals with the **scimago_not_cs** label

DATA ANALYSIS

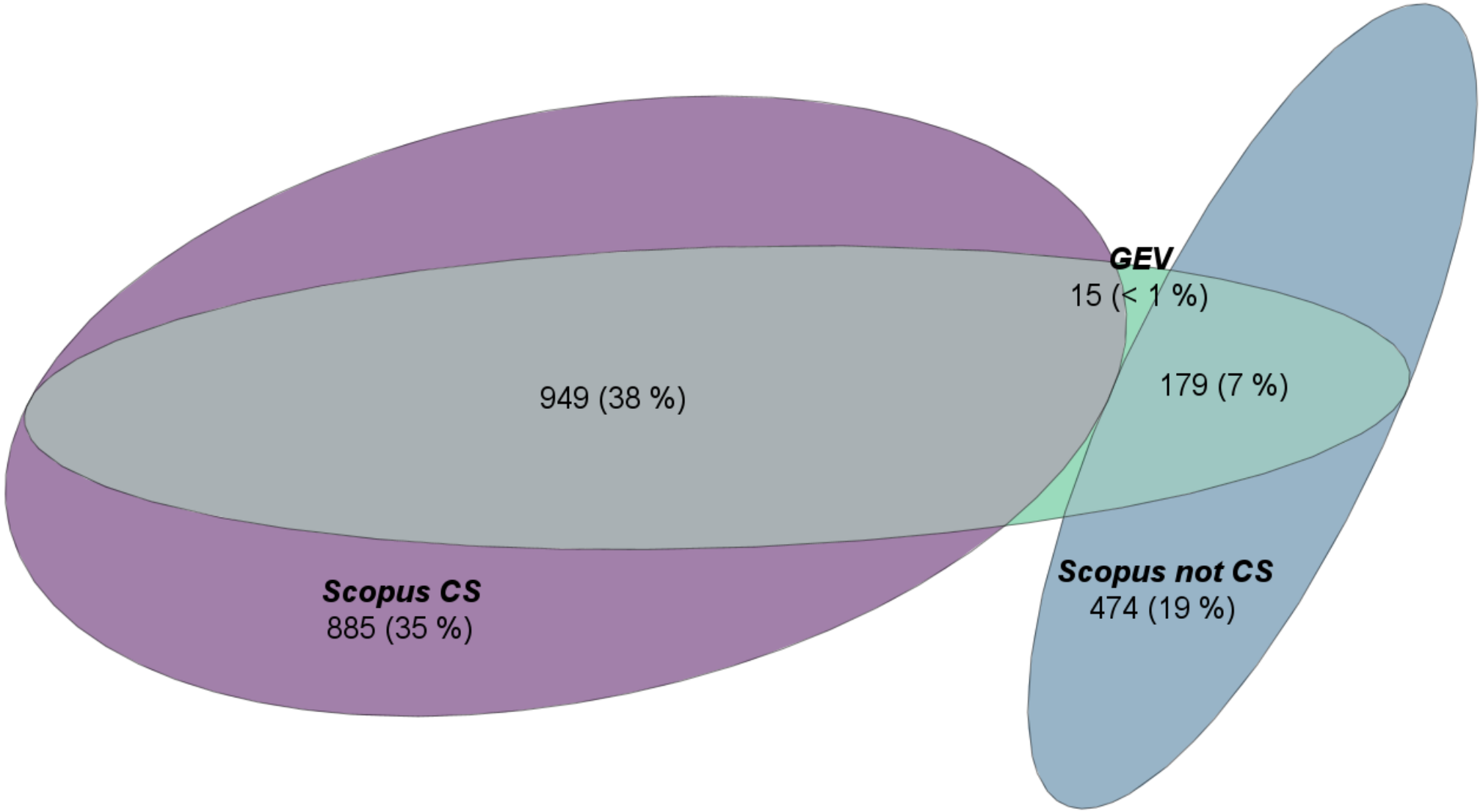
INSIGHTS: PAIRWISE ANALYSIS

	Clarivate™ WoS	anvur vQr GEV01 List for VQR 2015-2019	CORE Computing Research & Education	dblp computer science bibliography
Scopus®				
Clarivate™ WoS				
anvur vQr GEV01 List for VQR 2015-2019				
CORE Computing Research & Education				

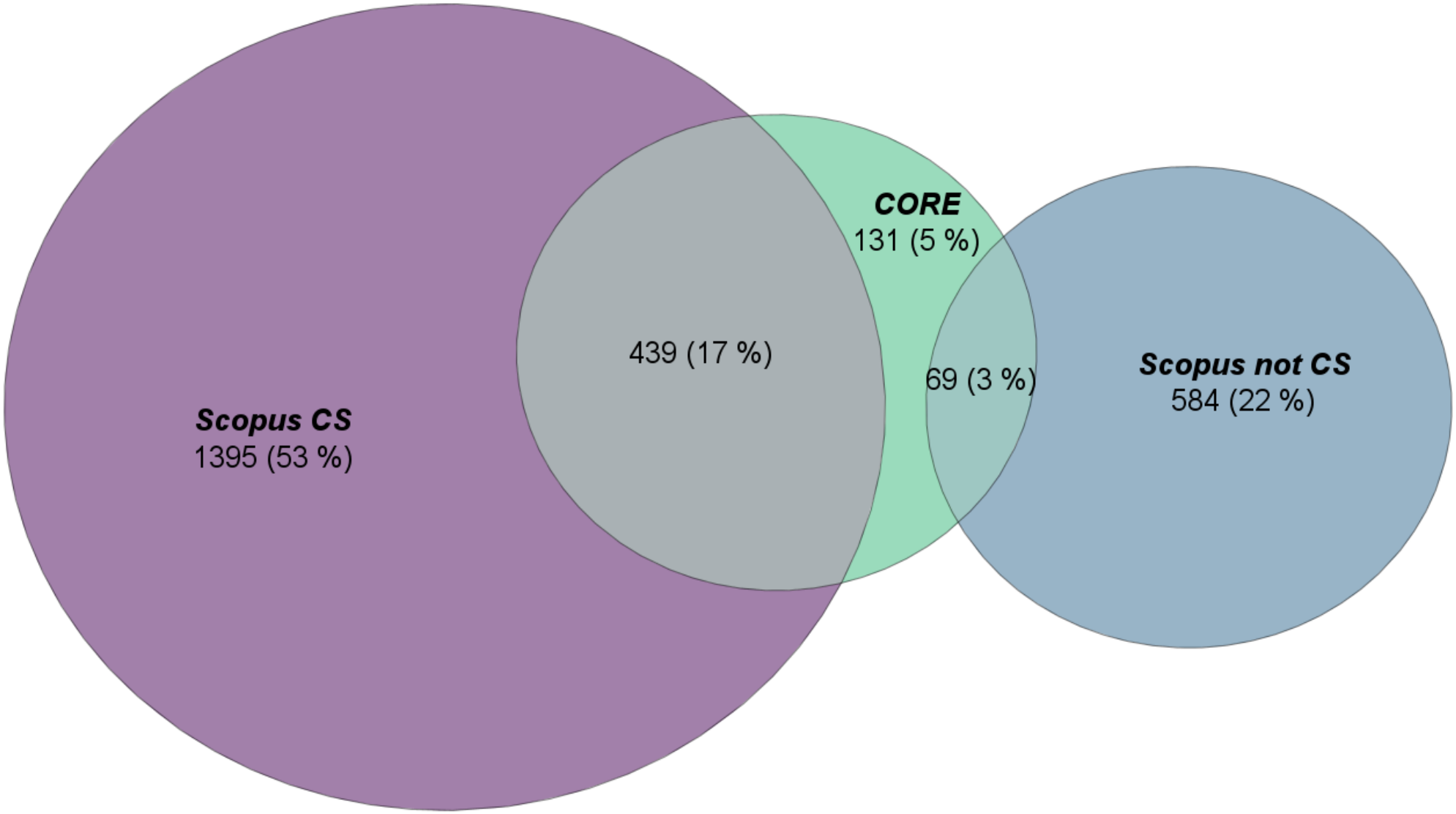
INSIGHTS: SCOPUS VS WoS



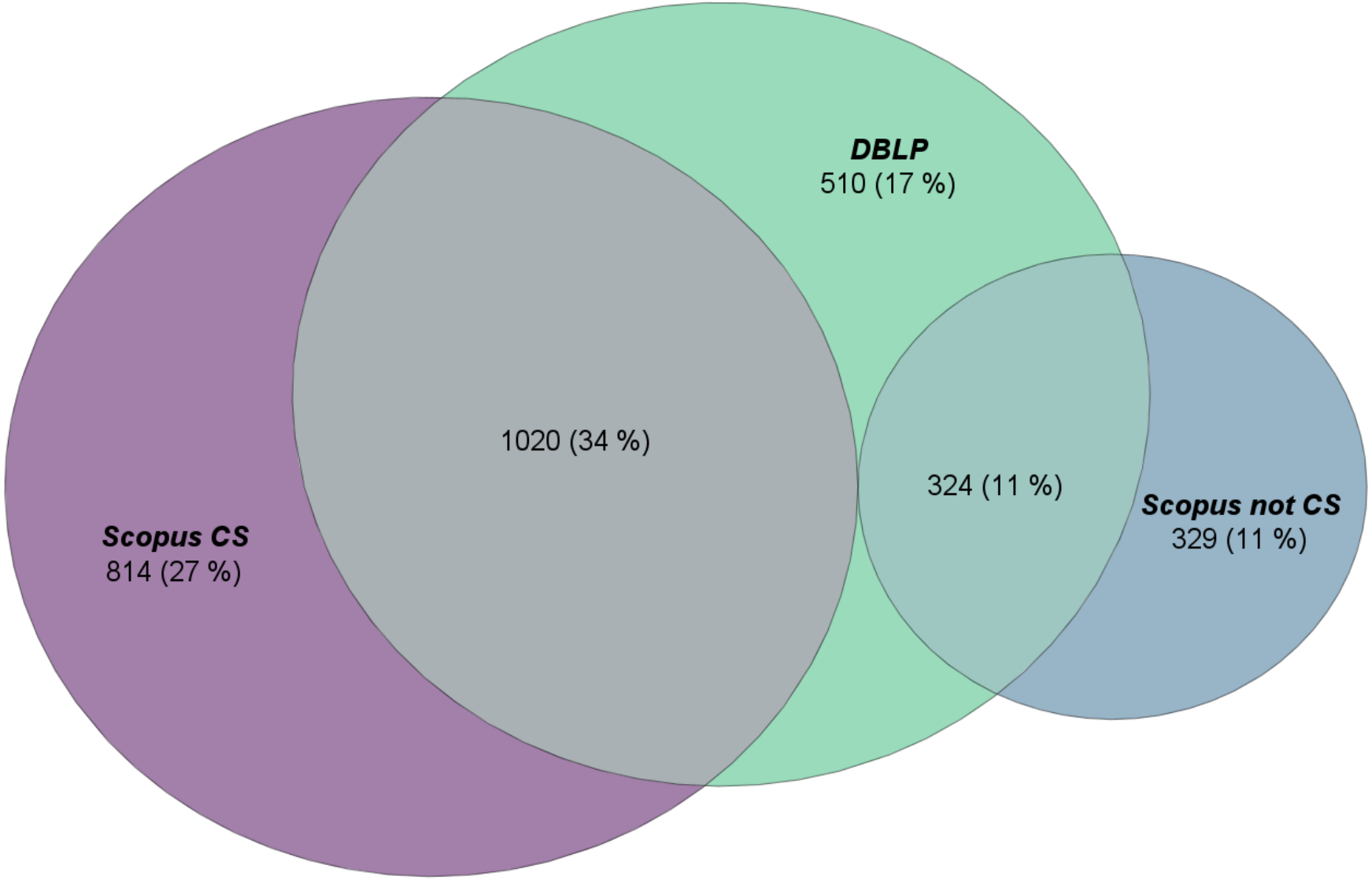
INSIGHTS: SCOPUS VS GEV



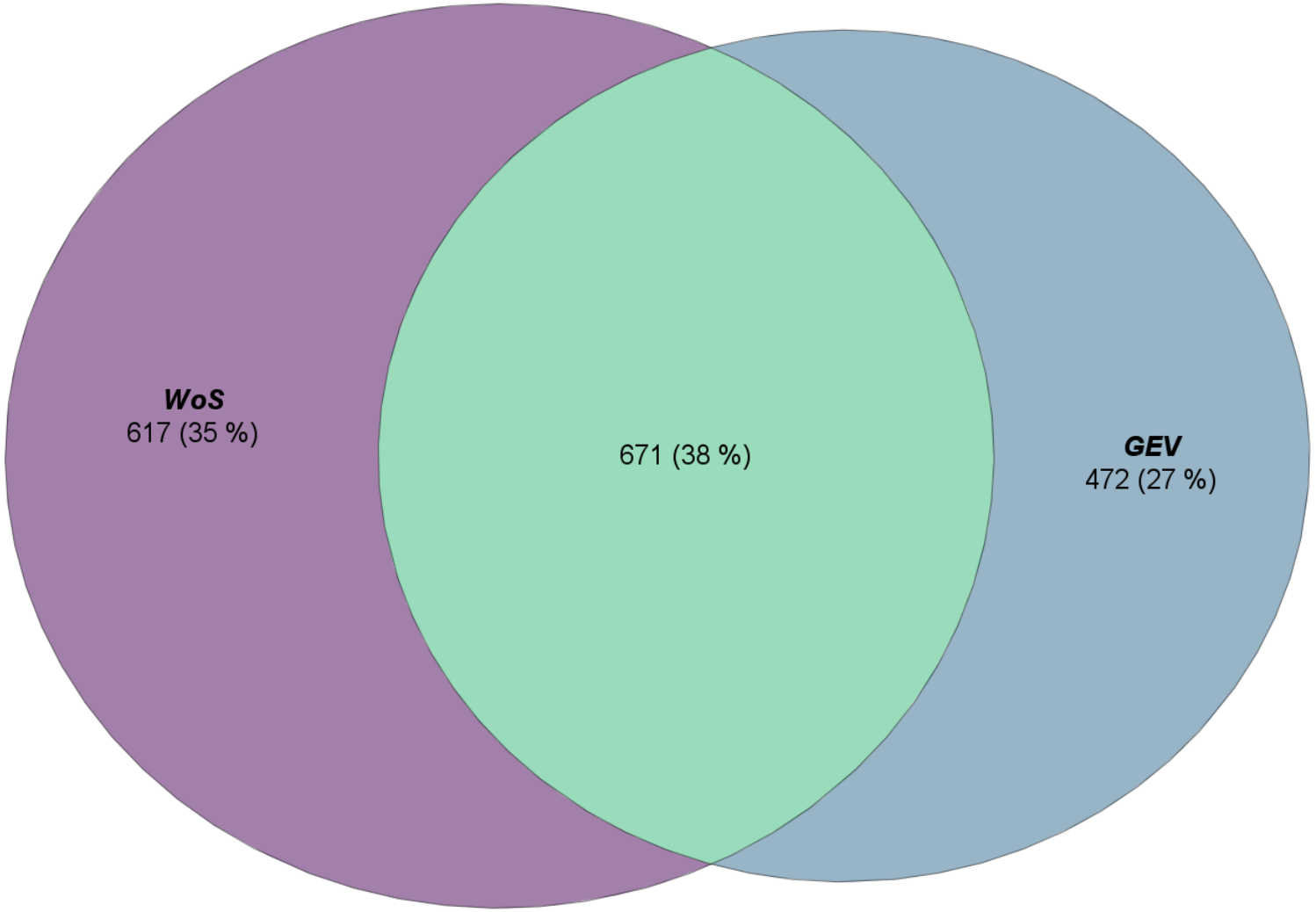
INSIGHTS: SCOPUS VS CORE



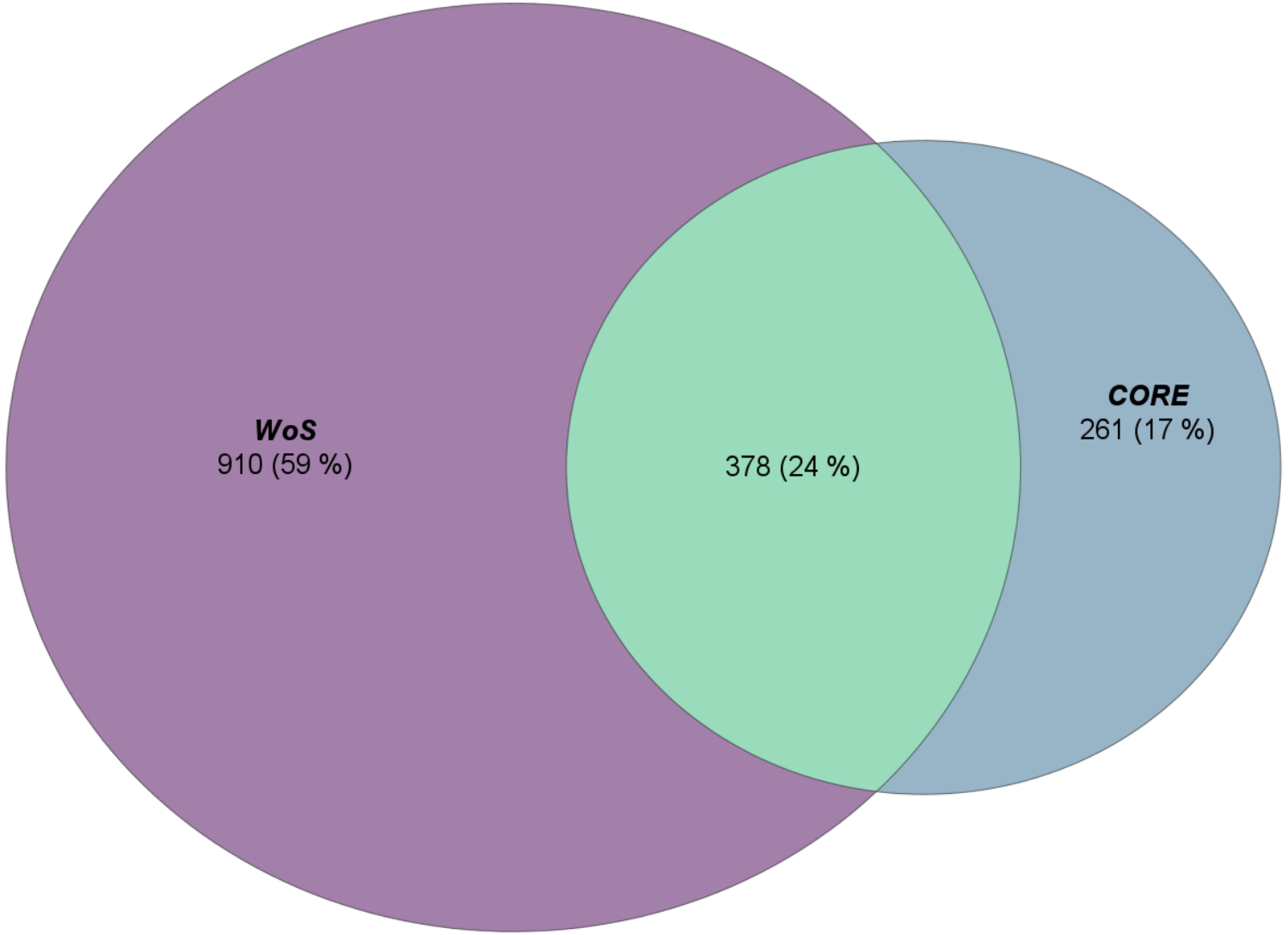
INSIGHTS: SCOPUS VS DBLP



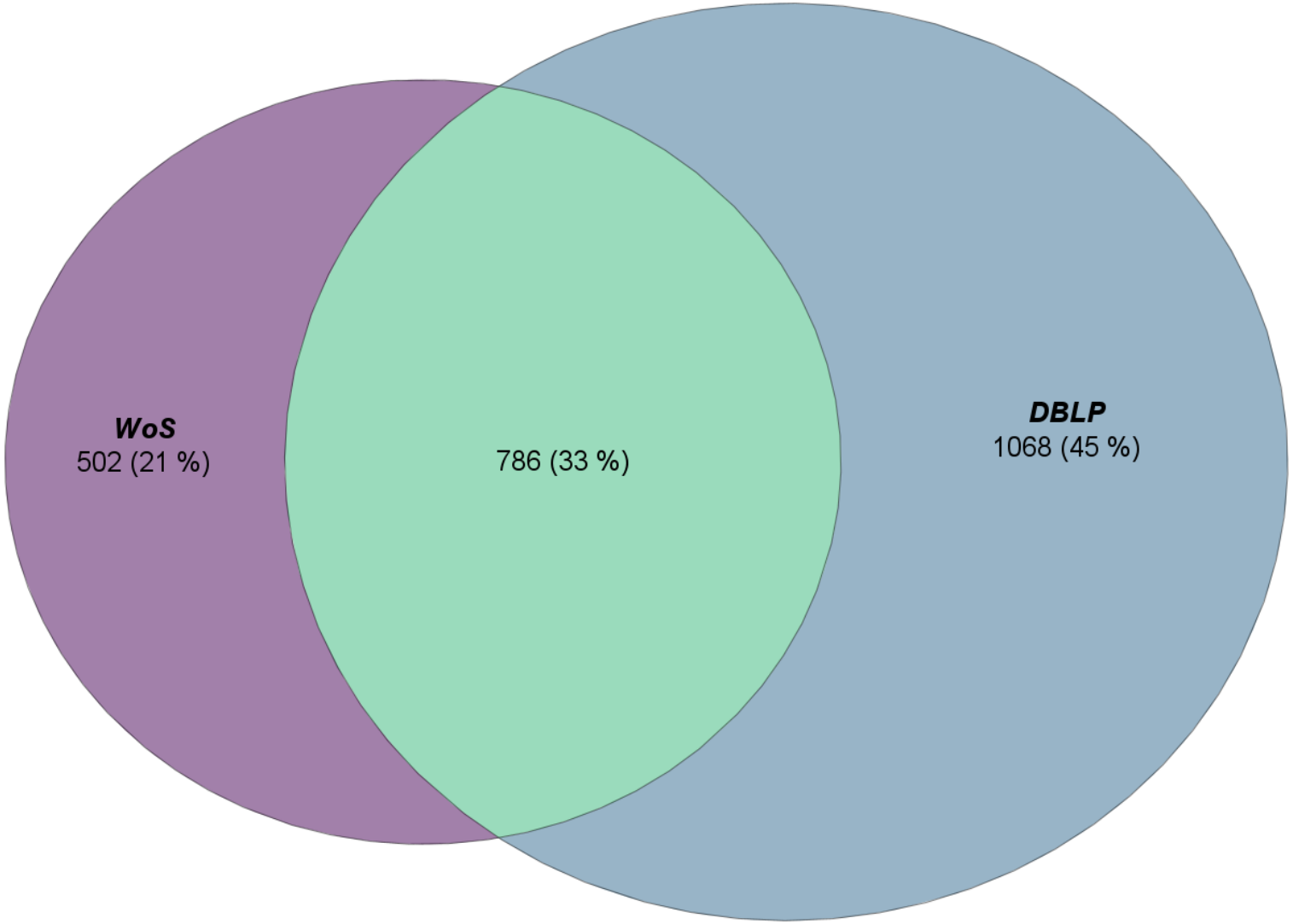
INSIGHTS: WoS VS GEV



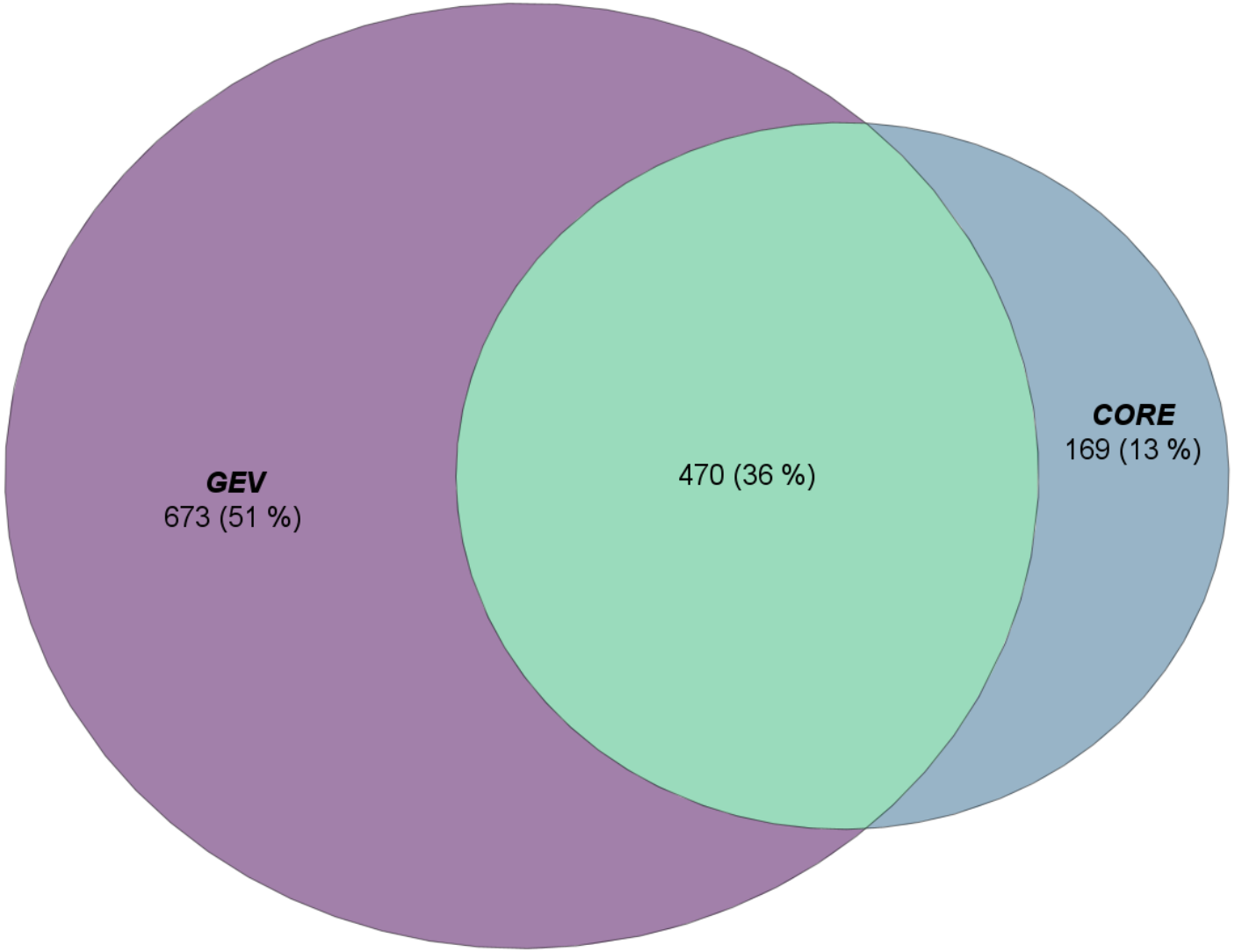
INSIGHTS: WoS VS CORE



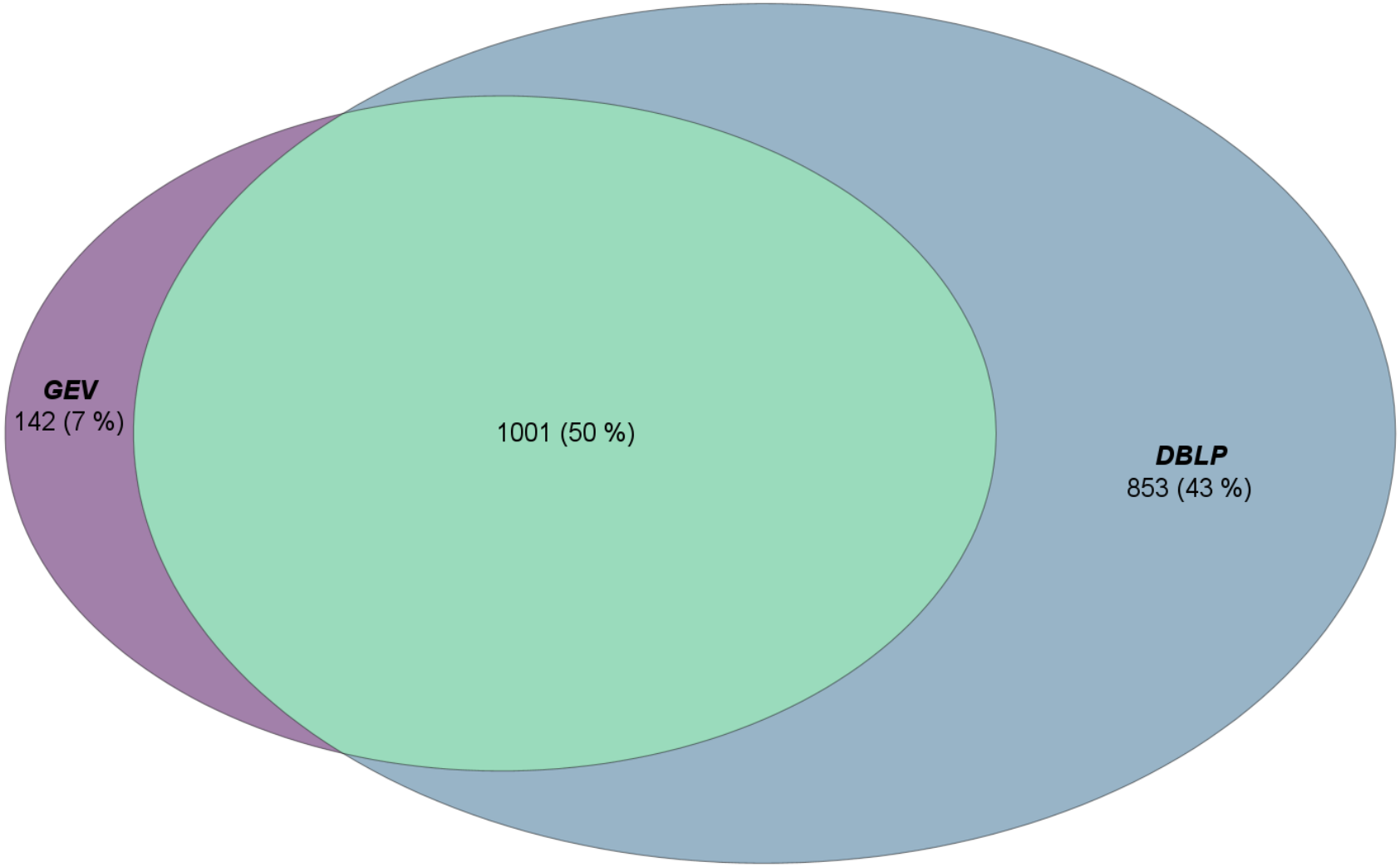
INSIGHTS: WoS VS DBLP



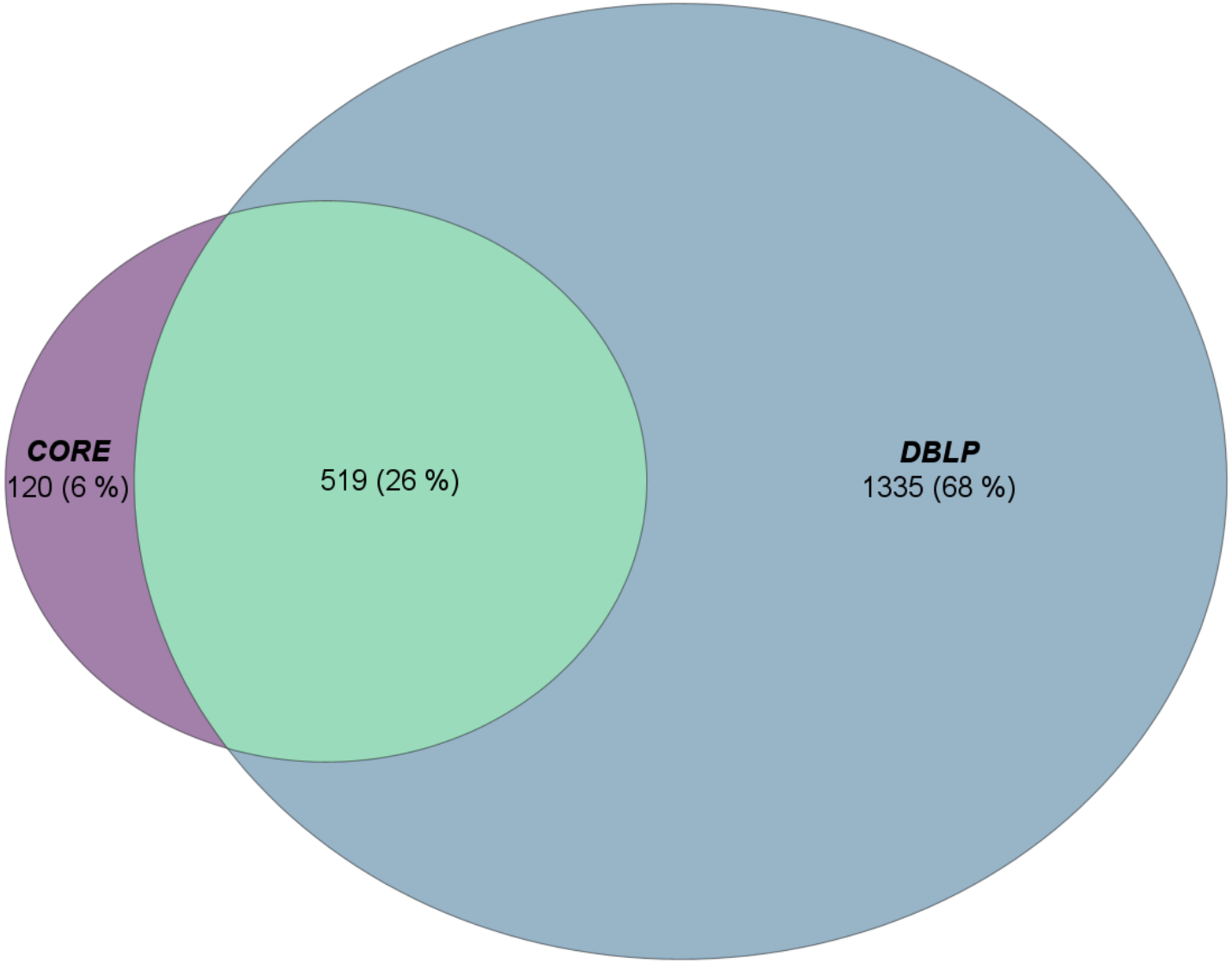
INSIGHTS: GEV VS CORE



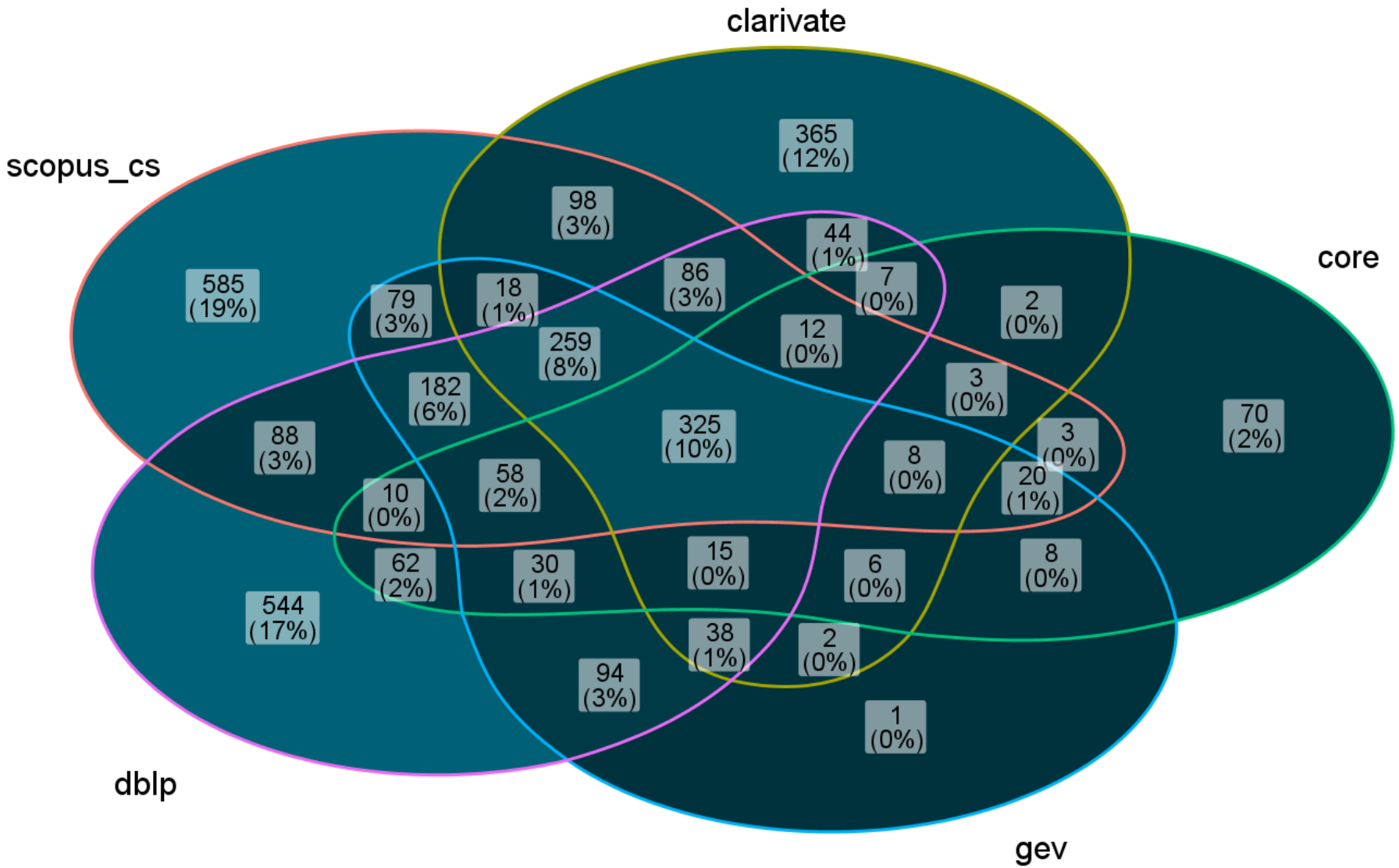
INSIGHTS: GEV VS DBLP



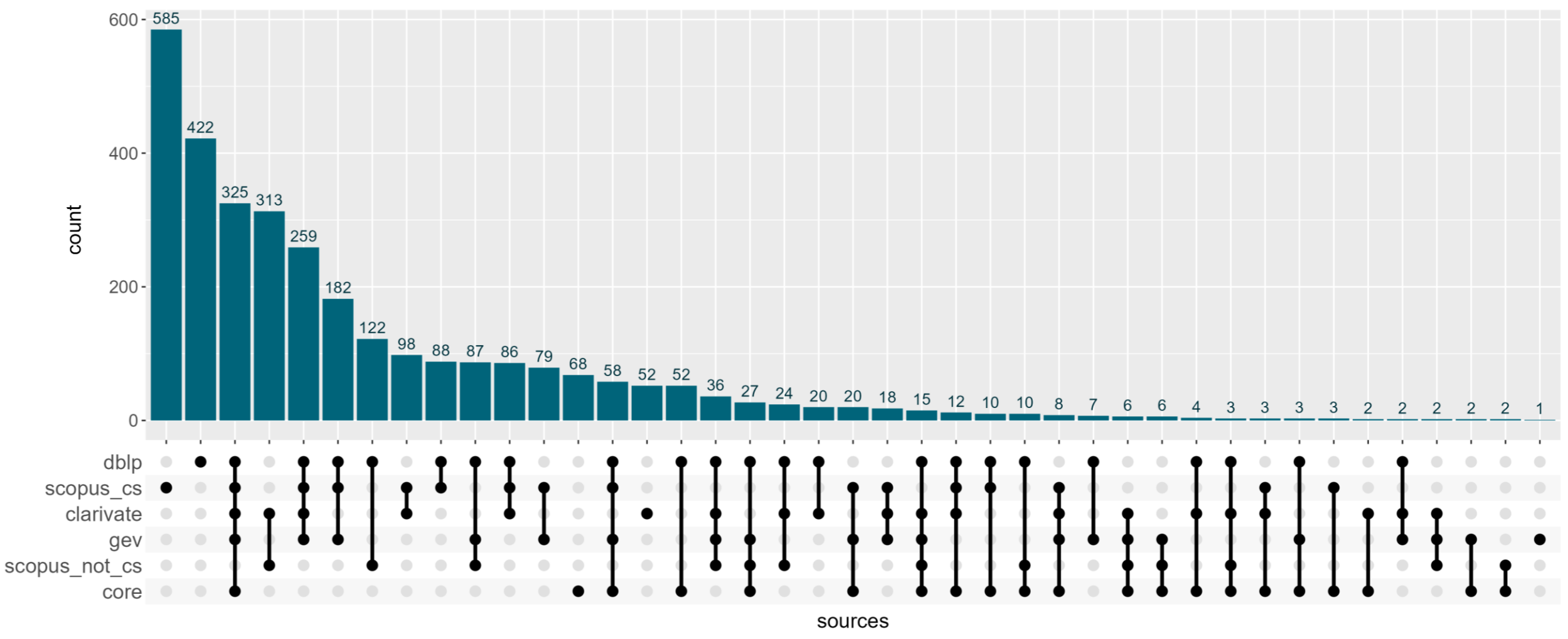
INSIGHTS: CORE VS DBLP



INTERSECTION BETWEEN SOURCES



INTERSECTIONS BETWEEN SOURCES



REPLICABILITY AND DATA AVAILABILITY

SOURCE CODE FOR REPLICATION

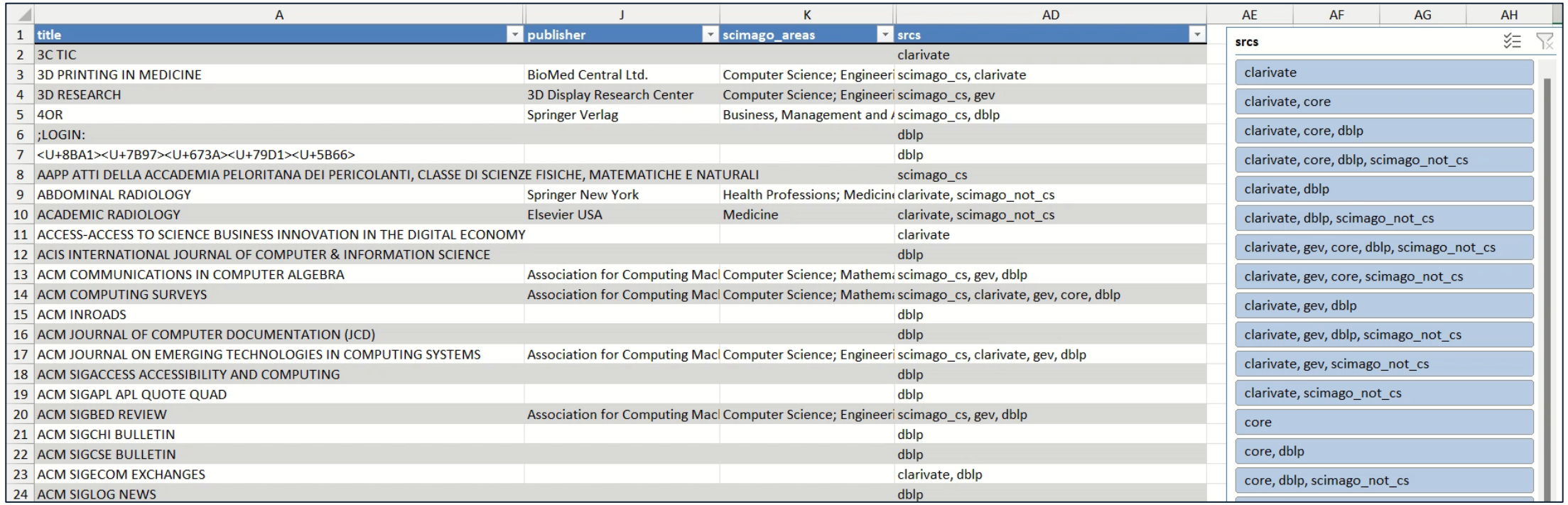
The full source code to replicate the analysis presented today is available, with detailed instructions, on a public GitHub repository:

- https://github.com/luistar/cs-journals-analysis-toolkit

Some raw data is not included due to Intellectual Property concerns, so you'll need to download it manually as detailed in the instructions.

COMPUTER SCIENCE JOURNALS LIST

- I'll be glad to share the complete Excel/CSV/JSON file obtained after running all the analysis scripts
  - Send me an email at luigiliberolucio.starace@unina.it if you're interested!
- The Excel file comes with an handly slicer to filter data



	A	J	K	AD
1	title	publisher	scimago_areas	srcs
2	3C TIC			clarivate
3	3D PRINTING IN MEDICINE	BioMed Central Ltd.	Computer Science; Engineeri	scimago_cs, clarivate
4	3D RESEARCH	3D Display Research Center	Computer Science; Engineeri	scimago_cs, gev
5	4OR	Springer Verlag	Business, Management and A	scimago_cs, dblp
6	;LOGIN:			dblp
7	<U+8BA1><U+7B97><U+673A><U+79D1><U+5B66>			dblp
8	AAPP ATTI DELLA ACCADEMIA PELORITANA DEI PERICOLANTI, CLASSE DI SCIENZE FISICHE, MATEMATICHE E NATURALI			scimago_cs
9	ABDOMINAL RADIOLOGY	Springer New York	Health Professions; Medicine	clarivate, scimago_not_cs
10	ACADEMIC RADIOLOGY	Elsevier USA	Medicine	clarivate, scimago_not_cs
11	ACCESS-ACCESS TO SCIENCE BUSINESS INNOVATION IN THE DIGITAL ECONOMY			clarivate
12	ACIS INTERNATIONAL JOURNAL OF COMPUTER & INFORMATION SCIENCE			dblp
13	ACM COMMUNICATIONS IN COMPUTER ALGEBRA	Association for Computing Mac	Computer Science; Mathema	scimago_cs, gev, dblp
14	ACM COMPUTING SURVEYS	Association for Computing Mac	Computer Science; Mathema	scimago_cs, clarivate, gev, core, dblp
15	ACM INROADS			dblp
16	ACM JOURNAL OF COMPUTER DOCUMENTATION (JCD)			dblp
17	ACM JOURNAL ON EMERGING TECHNOLOGIES IN COMPUTING SYSTEMS	Association for Computing Mac	Computer Science; Engineeri	scimago_cs, clarivate, gev, dblp
18	ACM SIGACCESS ACCESSIBILITY AND COMPUTING			dblp
19	ACM SIGAPL APL QUOTE QUAD			dblp
20	ACM SIGBED REVIEW	Association for Computing Mac	Computer Science; Engineeri	scimago_cs, gev, dblp
21	ACM SIGCHI BULLETIN			dblp
22	ACM SIGCSE BULLETIN			dblp
23	ACM SIGECOM EXCHANGES			clarivate, dblp
24	ACM SIGLOG NEWS			dblp

THIS PRESENTATION

This presentation is available as a PDF file in the GitHub repository:

- https://github.com/luistar/cs-journals-analysis-toolkit/blob/main/computer-science-journals-presentation.pdf