

UNIVERSITÀ DEGLI STUDI DI NAPOLI FEDERICO II  
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# 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



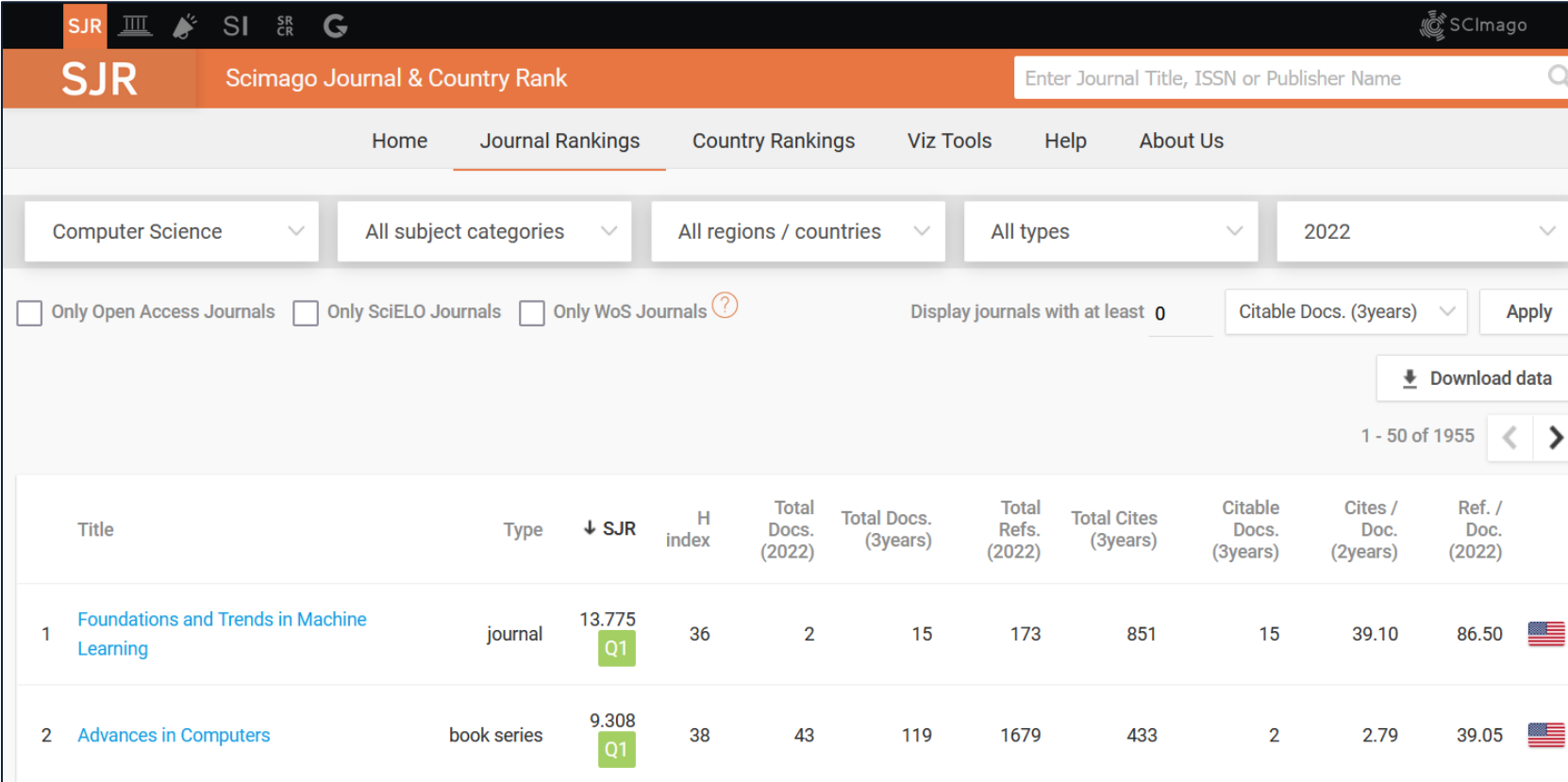
CORE  
*Computing Research & Education*





dblp  
computer science bibliography

# DATA COLLECTION: SCOPUS

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



The screenshot shows the Scimago Journal & Country Rank website interface. The page is titled "SJR Scimago Journal & Country Rank" and includes a search bar for "Enter Journal Title, ISSN or Publisher Name". The navigation menu includes "Home", "Journal Rankings", "Country Rankings", "Viz Tools", "Help", and "About Us". The current filters are: "Computer Science" (subject category), "All subject categories" (subject categories), "All regions / countries" (regions/countries), "All types" (types), and "2022" (year). There are checkboxes for "Only Open Access Journals", "Only SciELO Journals", and "Only WoS Journals". A filter for "Display journals with at least 0 Citable Docs. (3years)" is set. A "Download data" button is visible. The table below shows the top journals in the field.

	Title	Type	↓ SJR	H index	Total Docs. (2022)	Total Docs. (3years)	Total Refs. (2022)	Total Cites (3years)	Citable Docs. (3years)	Cites / Doc. (2years)	Ref. / Doc. (2022)	
1	<a href="#">Foundations and Trends in Machine Learning</a>	journal	13.775 Q1	36	2	15	173	851	15	39.10	86.50	
2	<a href="#">Advances in Computers</a>	book series	9.308 Q1	38	43	119	1679	433	2	2.79	39.05	

# DATA COLLECTION: CLARIVATE WoS

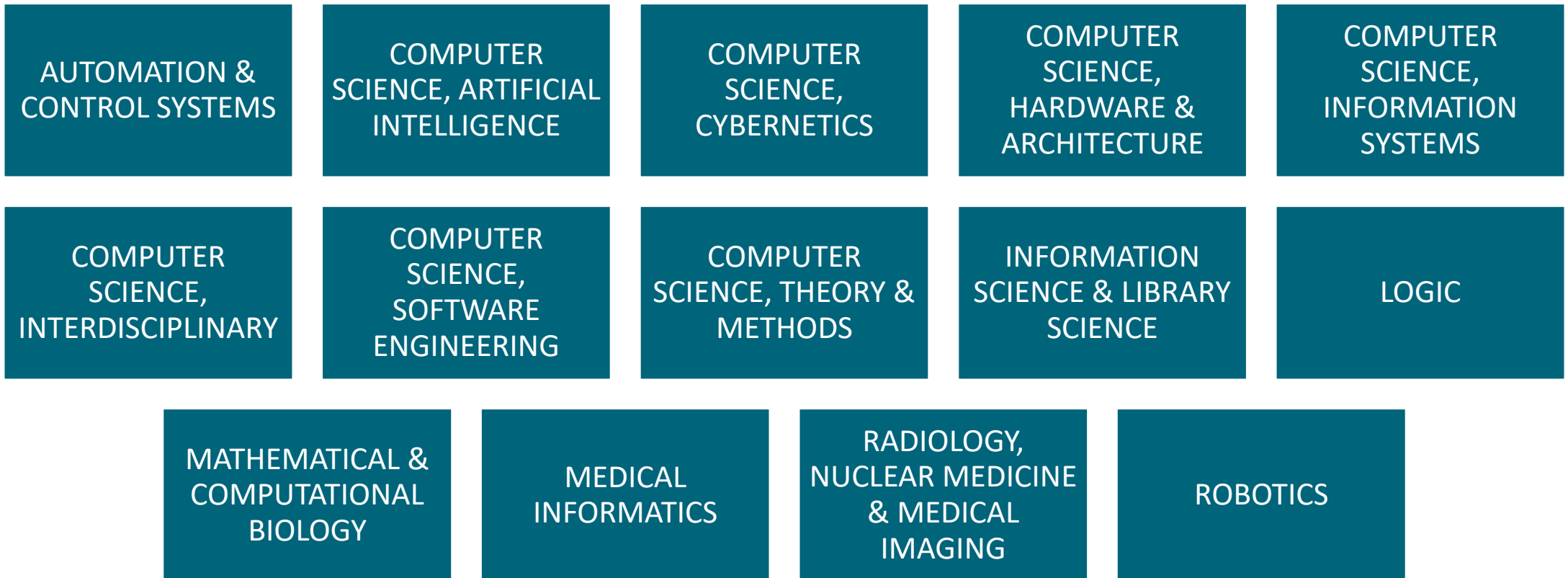
- No straightforward way to download all data
- Export to CSV or XLSX limited to 600 entries
- <https://jcr.clarivate.com/jcr/browse-categories>

The screenshot shows the Clarivate Journal Citation Reports website. The navigation bar includes 'Journal Citation Reports™', 'Journals', 'Categories', 'Publishers', 'Countries/Regions', 'My favorites', 'Sign In', and a 'Register' button. The main heading is 'Categories by Group' with a link to 'See all 254 Categories'. A dropdown menu is set to 'Sort by: Alphabetical'. The table below shows the following data:

	NUMBER OF CATEGORIES	NUMBER OF JOURNALS	NUMBER OF CITABLE ITEMS
Computer Science	14	1,604	226,856

# DATA COLLECTION: CLARIVATE WoS

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



# DATA COLLECTION: CLARIVATE WoS

Clarivate maintains different citation indexes

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

<u>Valutazione della Qualità della Ricerca 2015-2019 (VQR 2015-2019)</u> 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)



Computing Research & Education

[CORE homepage](#) | [CORE rankings page](#) | [Frequently asked questions](#)  
[Search conferences](#)

Search by: **All** Source: **CORE2020**

**Search** Showing results 1 - 50 of 639 **Export**

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

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	<a href="#">view</a>	No	0899	0	N/A
ACM Computing Surveys	CORE2020	A*	<a href="#">view</a>	No	0803	0	N/A
ACM Transactions on Algorithms	CORE2020	A	<a href="#">view</a>	Yes	0802	1	5.0

# DATA COLLECTION: DBLP

- Collected Journal titles and ISSNs by scraping the website

The image shows two overlapping screenshots of the DBLP website. The left screenshot shows the 'Computer Science Journals' page, and the right screenshot shows the 'Advances in Artificial Intelligence and Machine Learning (AAIML)' journal page. A teal arrow points from the journal title in the left screenshot to the journal details in the right screenshot.

**Left Screenshot: Computer Science Journals**

- Logo: дблп computer science bibliography
- Navigation: home | browse | search | about | nfdi
- Section: Computer Science Journals
- Home link: > Home
- Browse by publisher
- Jump to Journals starting with: # A B C D E F G H I J K L M N O P Q R S T U V W
- Links: [previous 100 entries] [next 100 entries]
- Section: Journals starting from "计算机科学"
- Journal list:
  - 计算机科学
  - 3-D Information Modeling; International Journal of ... (IJ3DIM)
  - 4OR: Quarterly Journal of Operations Research
  - AAIML - Advances in Artificial Intelligence and Machine Learning
  - Access; IEEE ...
  - Accessibility and Computing; ACM SIGACCESS ...
  - Accessible Computing; ACM Transactions on ... (TACCESS)

**Right Screenshot: Advances in Artificial Intelligence and Machine Learning (AAIML)**

- Logo: дблп computer science bibliography
- Navigation: home | browse | search | about | nfdi
- Search bar: search dblp
- Section: Advances in Artificial Intelligence and Machine Learning (AAIML)
- Home link: > Home > Journals
- Menu: Dagstuhl
- Section: Venue Information
  - ISO 4 abbr.: Adv. Artif. Intell. Mach. Learn.
  - issn: 2582-9793 (online)
  - access: some or all publications **openly available**
  - Volume 3: 2023
  - Volume 2: 2022
  - Volume 1: 2021
- Section: Venue statistics
  - records by year: 2013, 2023 (40)
  - document access: open (87)
  - frequent authors: Wenping Wang (5)

# 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
  - Appear in at least one of the considered sources (except Scimago – CS area)
  - Are indexed on Scopus, but in an area that is not «Computer Science»

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

# INSIGHTS: PAIRWISE ANALYSIS

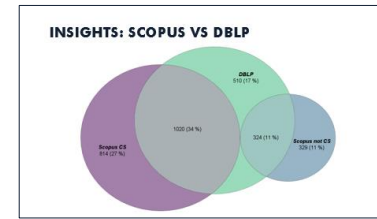
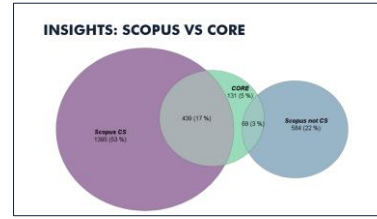
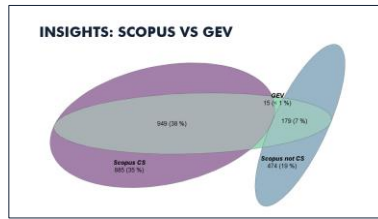
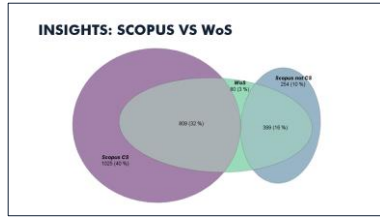
**Clarivate™**  
WoS

anvur vqr  
GEV01 List for VQR  
2015-2019

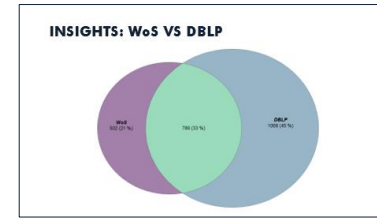
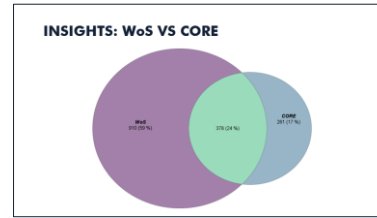
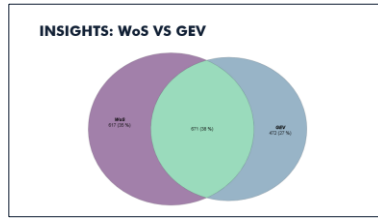
**CORE**  
Computing Research & Education

**dblp**  
computer science bibliography

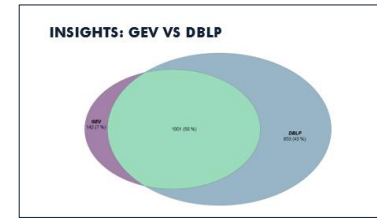
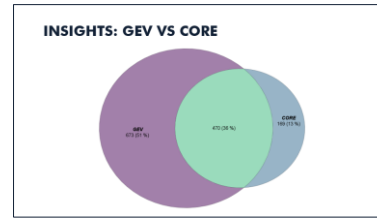
Scopus®



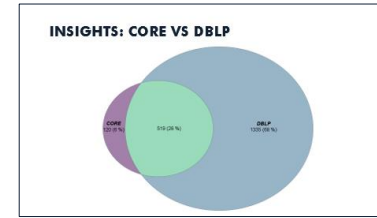
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WoS



anvur vqr  
GEV01 List for  
VQR 2015-2019

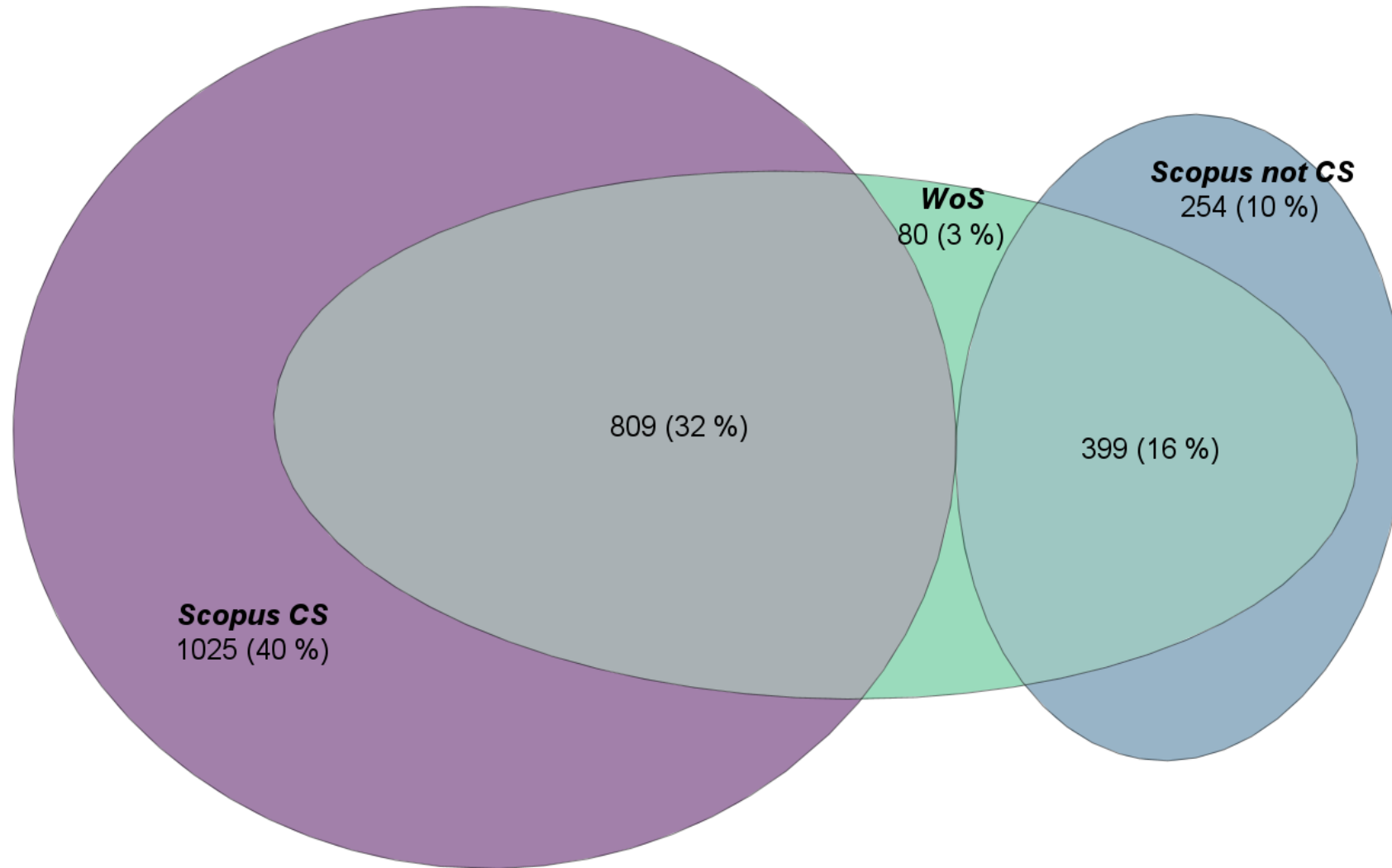


**CORE**  
Computing Research & Education

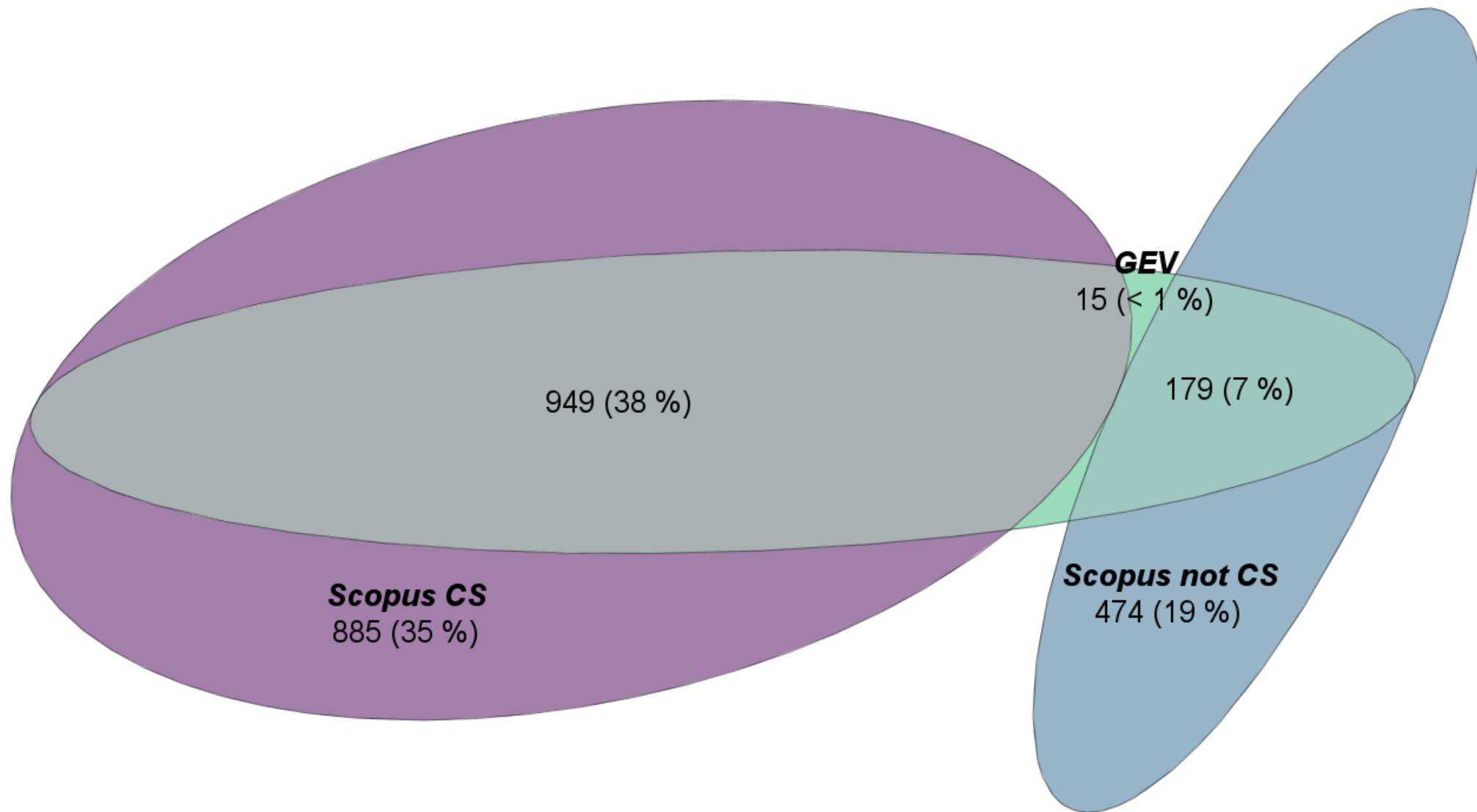




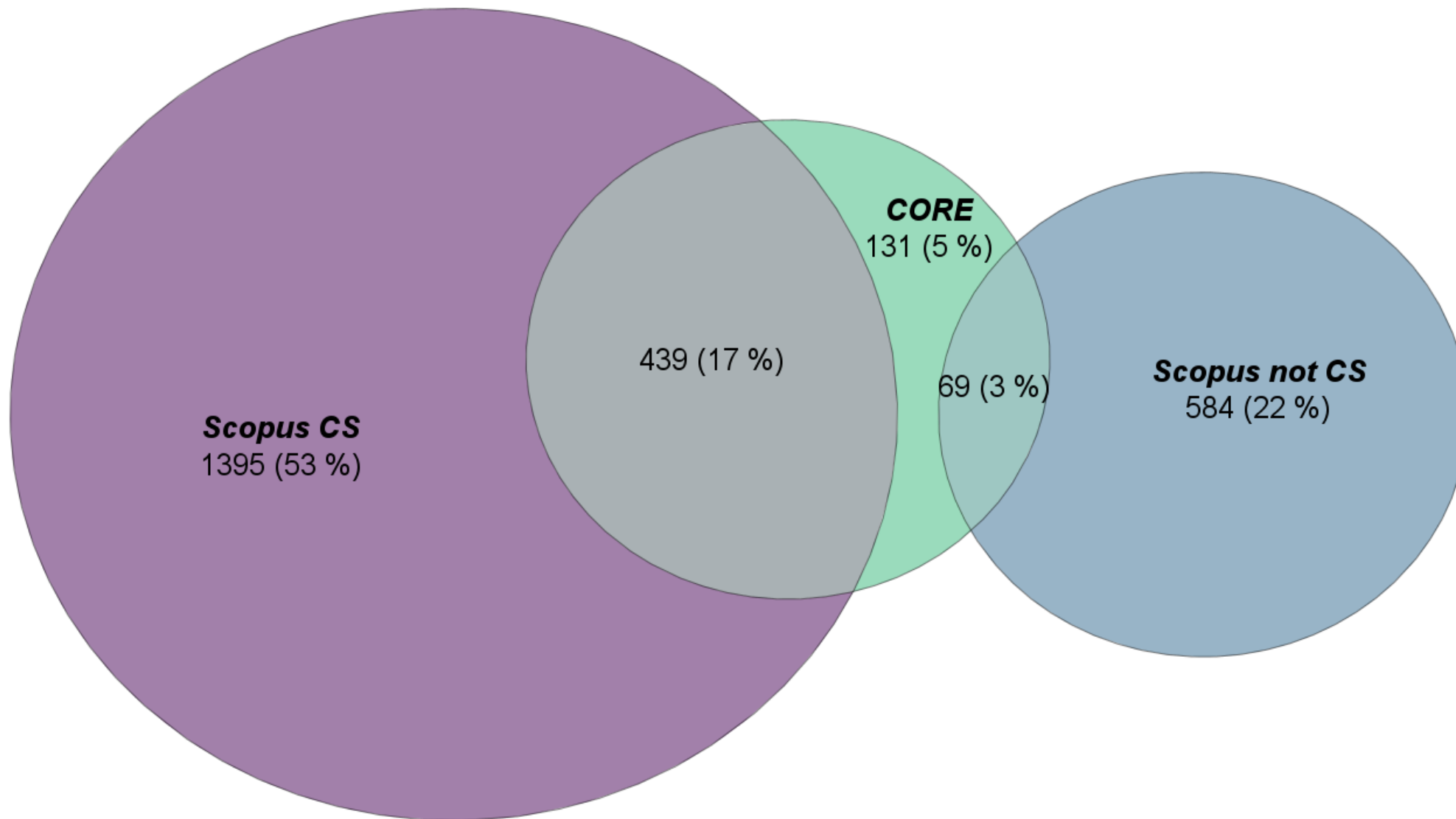
# INSIGHTS: SCOPUS VS WoS



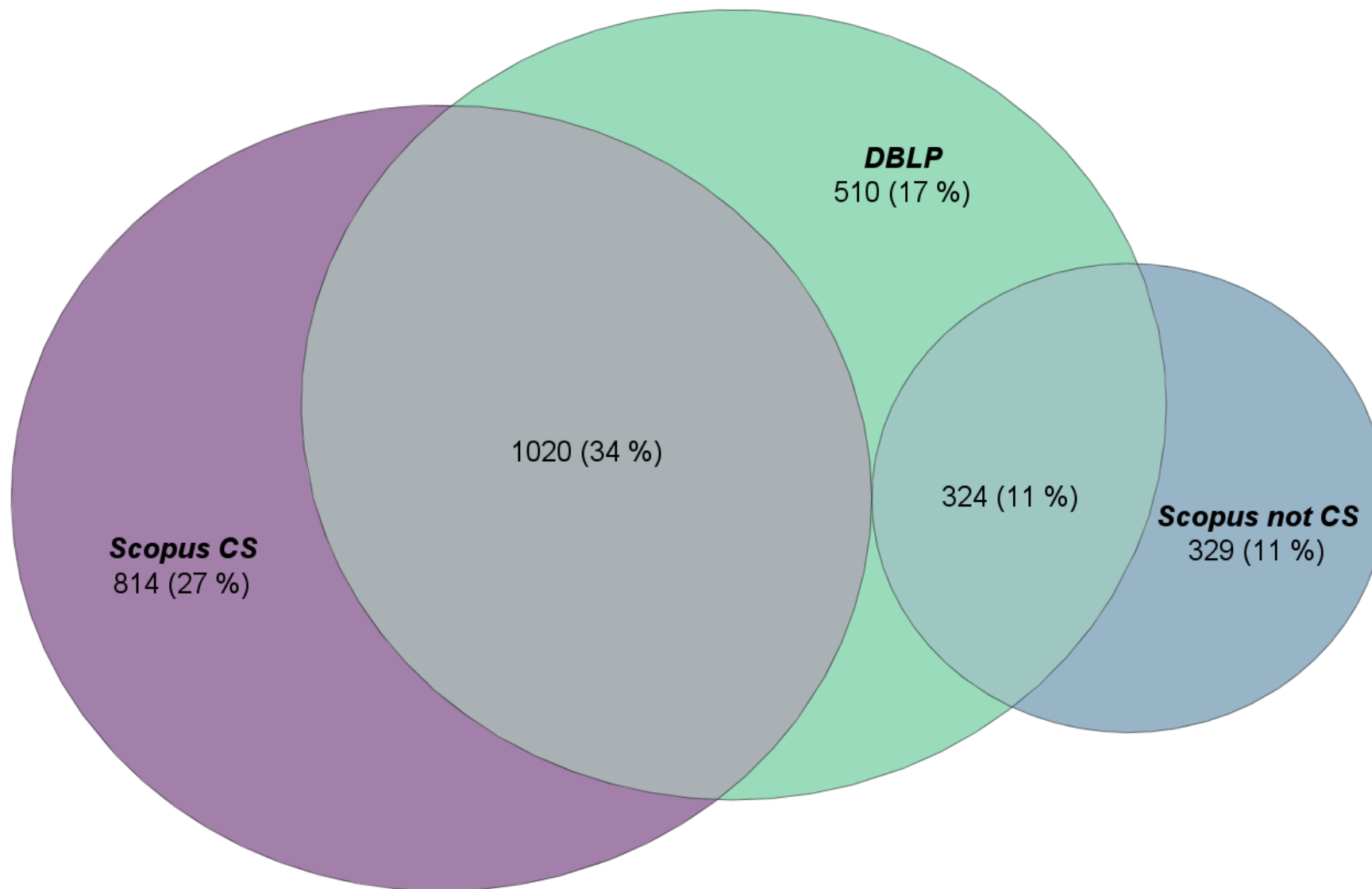
# INSIGHTS: SCOPUS VS GEV



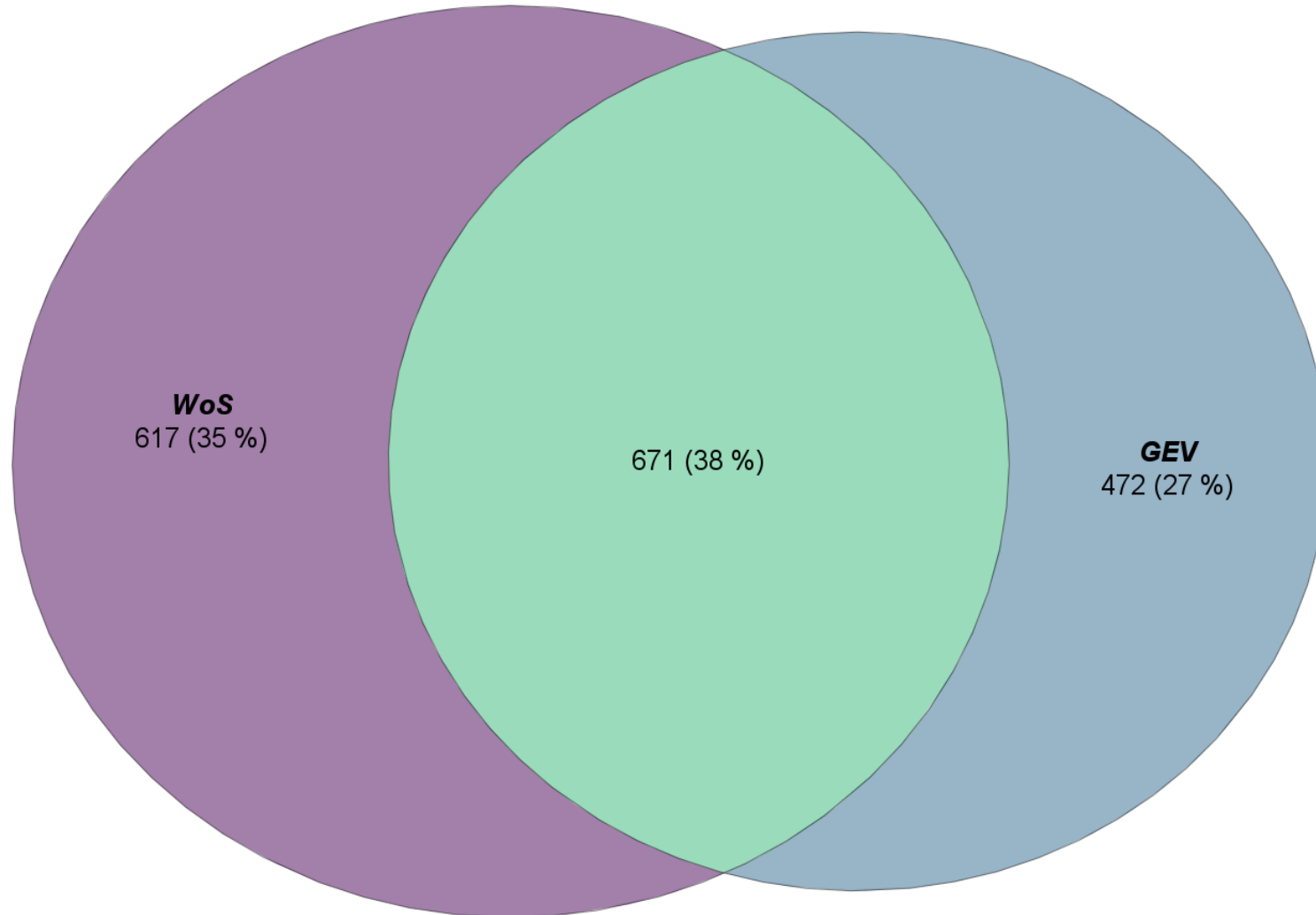
# INSIGHTS: SCOPUS VS CORE



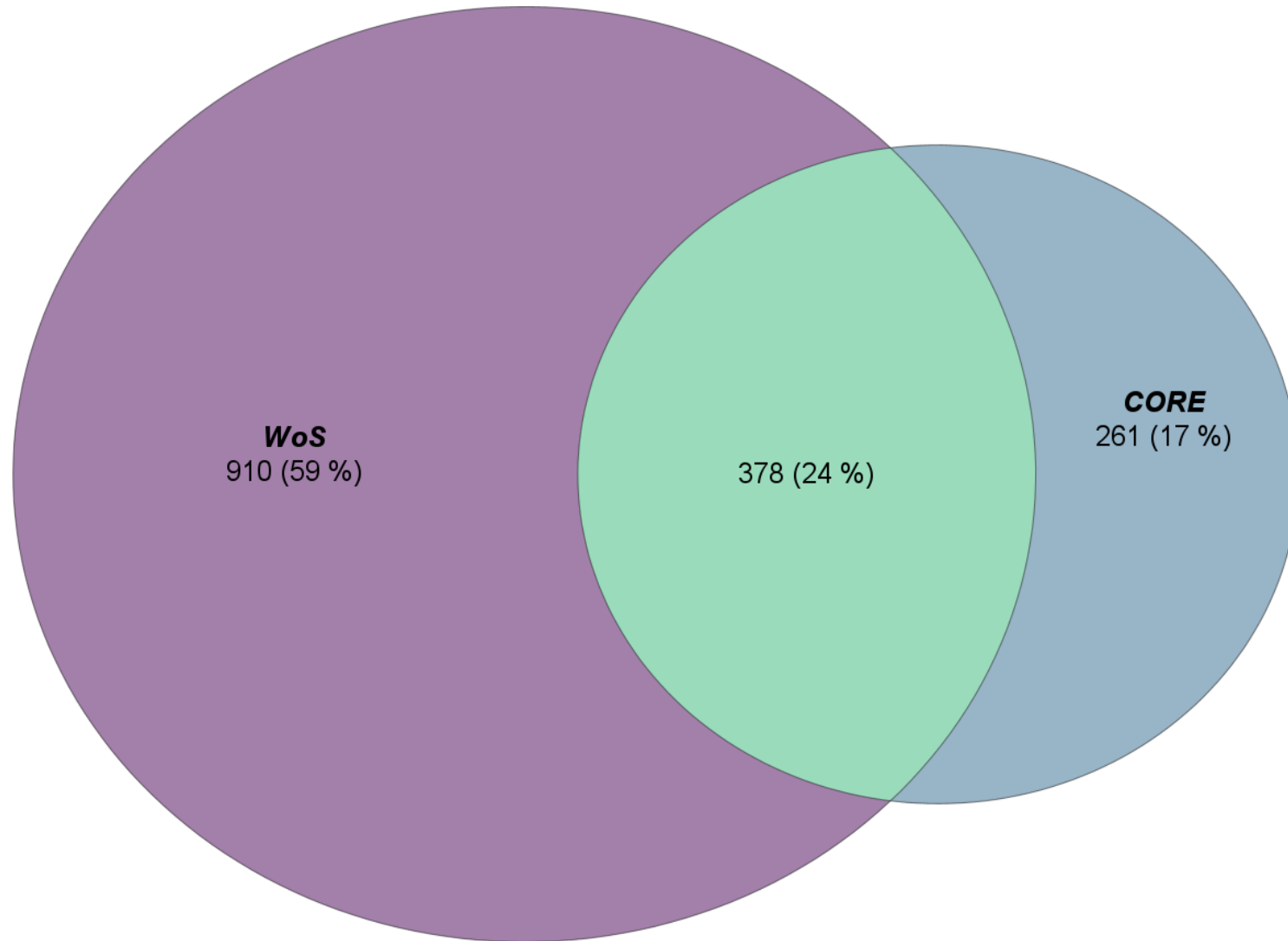
# INSIGHTS: SCOPUS VS DBLP



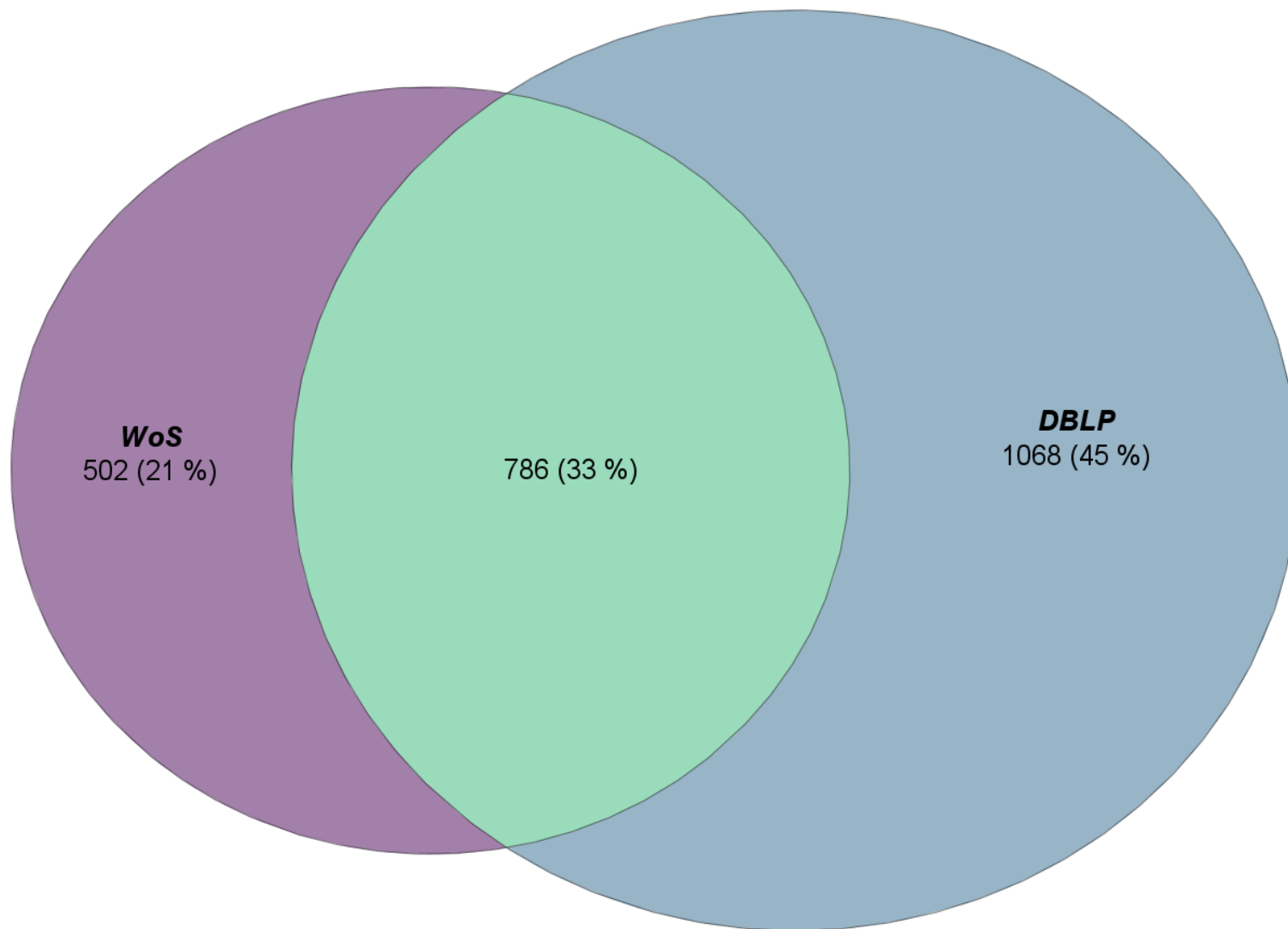
# INSIGHTS: WoS VS GEV



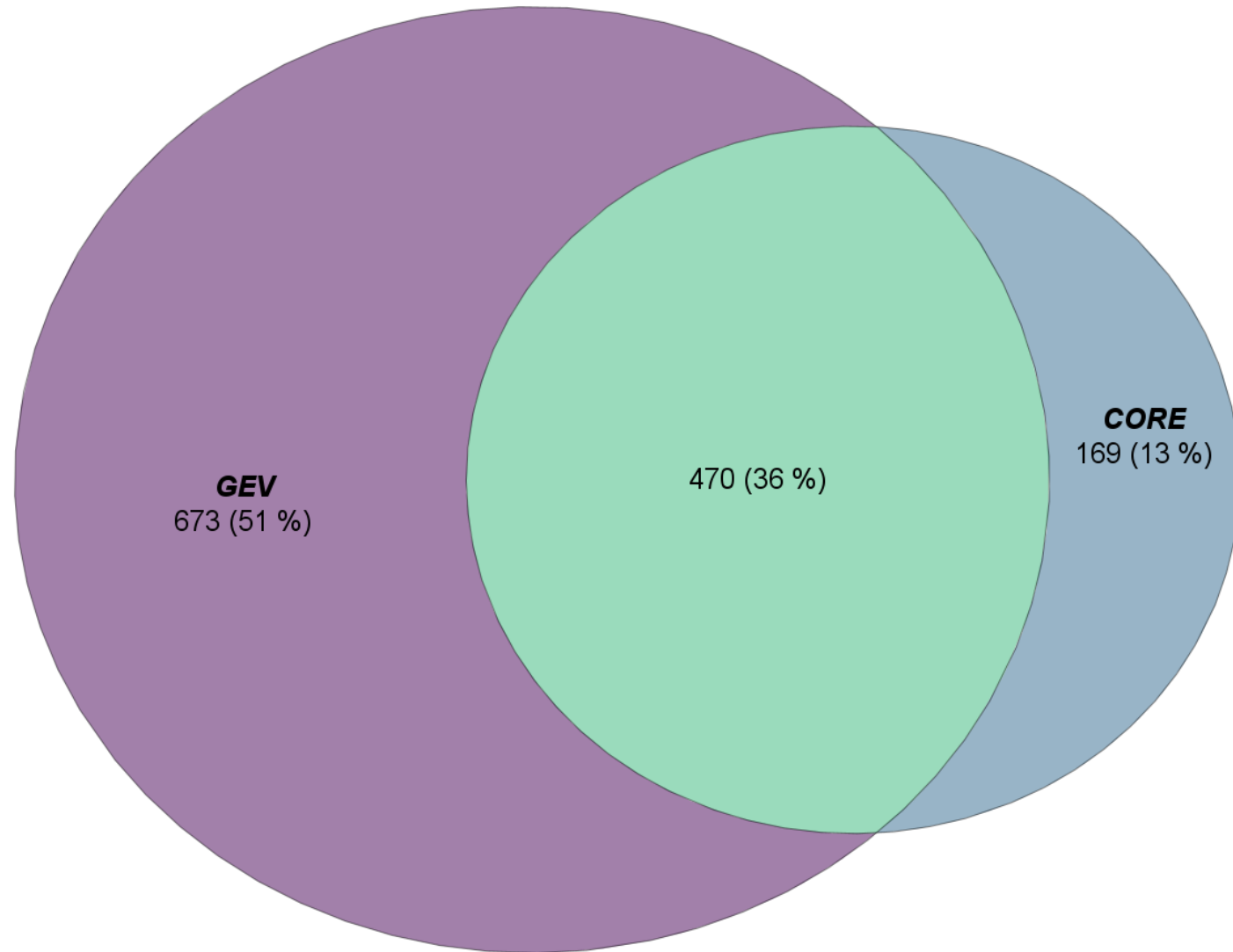
# INSIGHTS: WoS VS CORE



# INSIGHTS: WoS VS DBLP

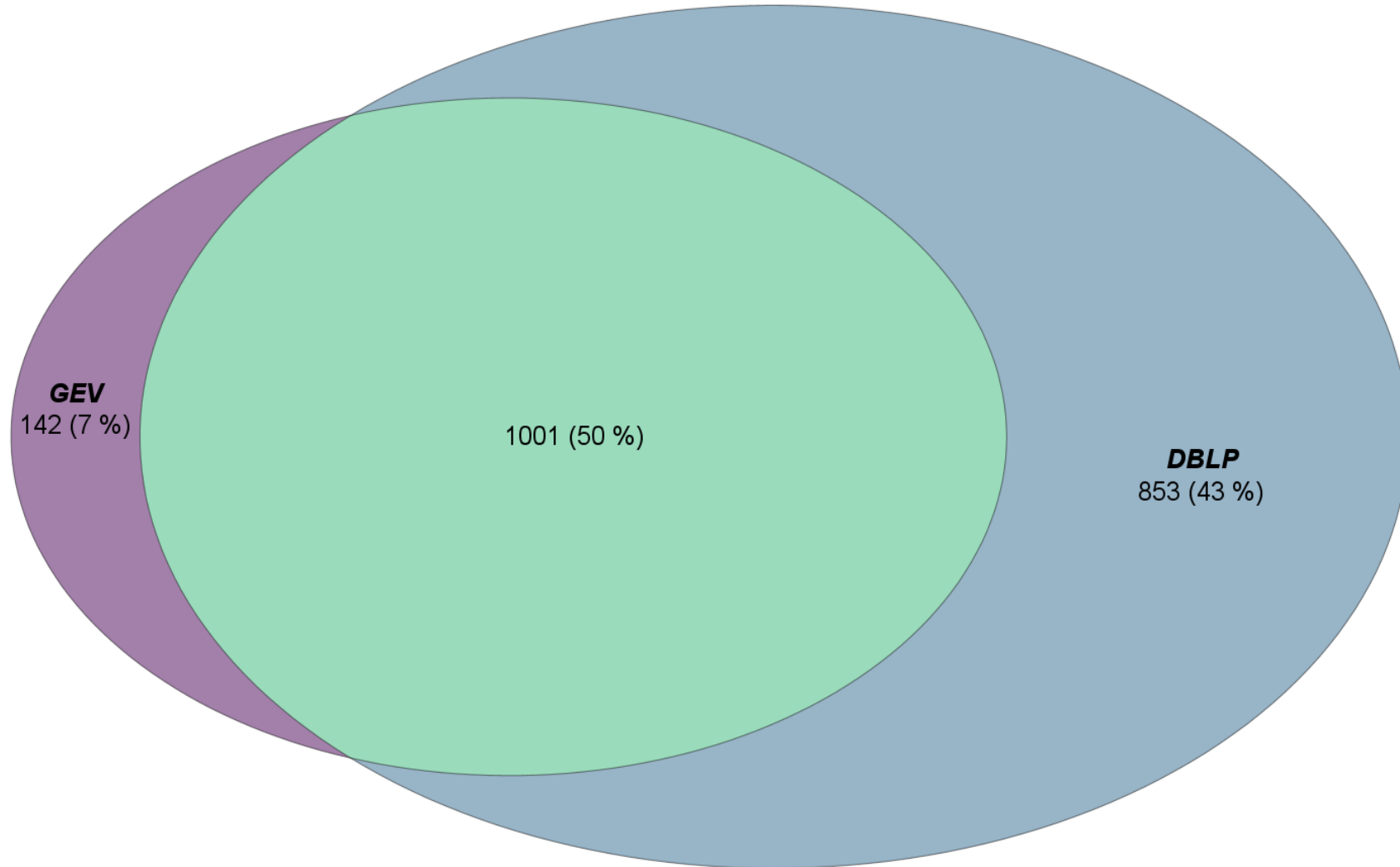


# INSIGHTS: GEV VS CORE

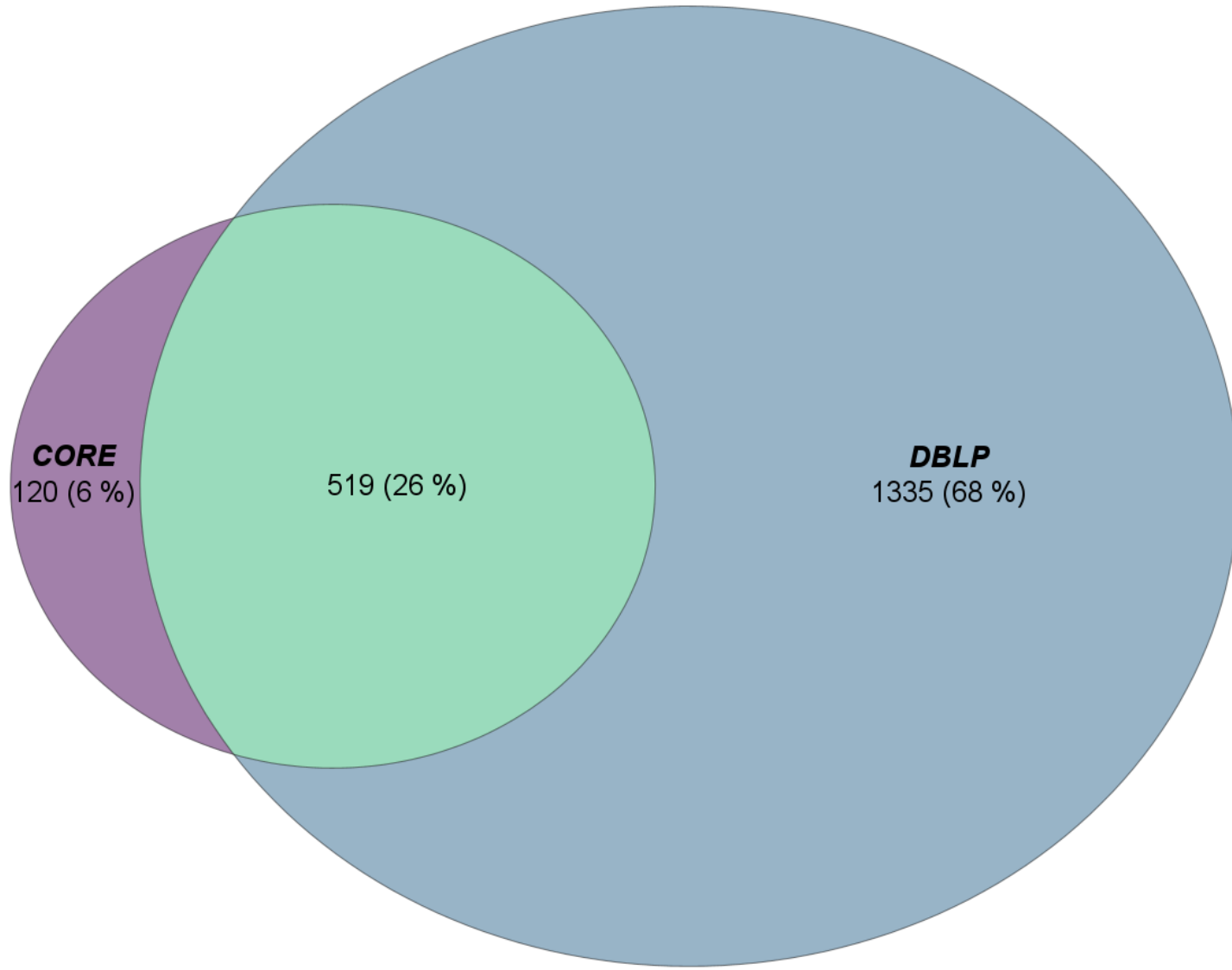




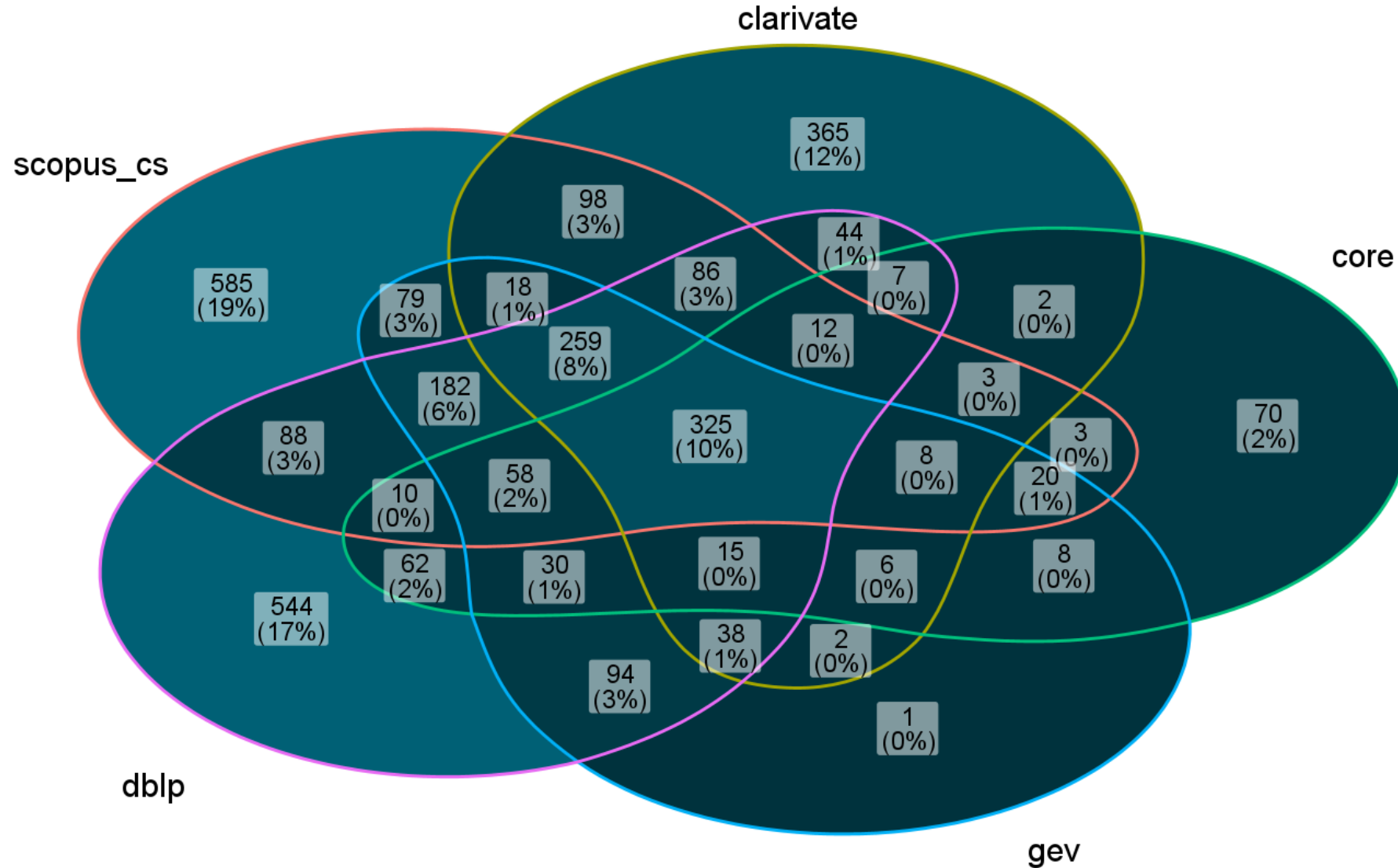
# INSIGHTS: GEV VS DBLP



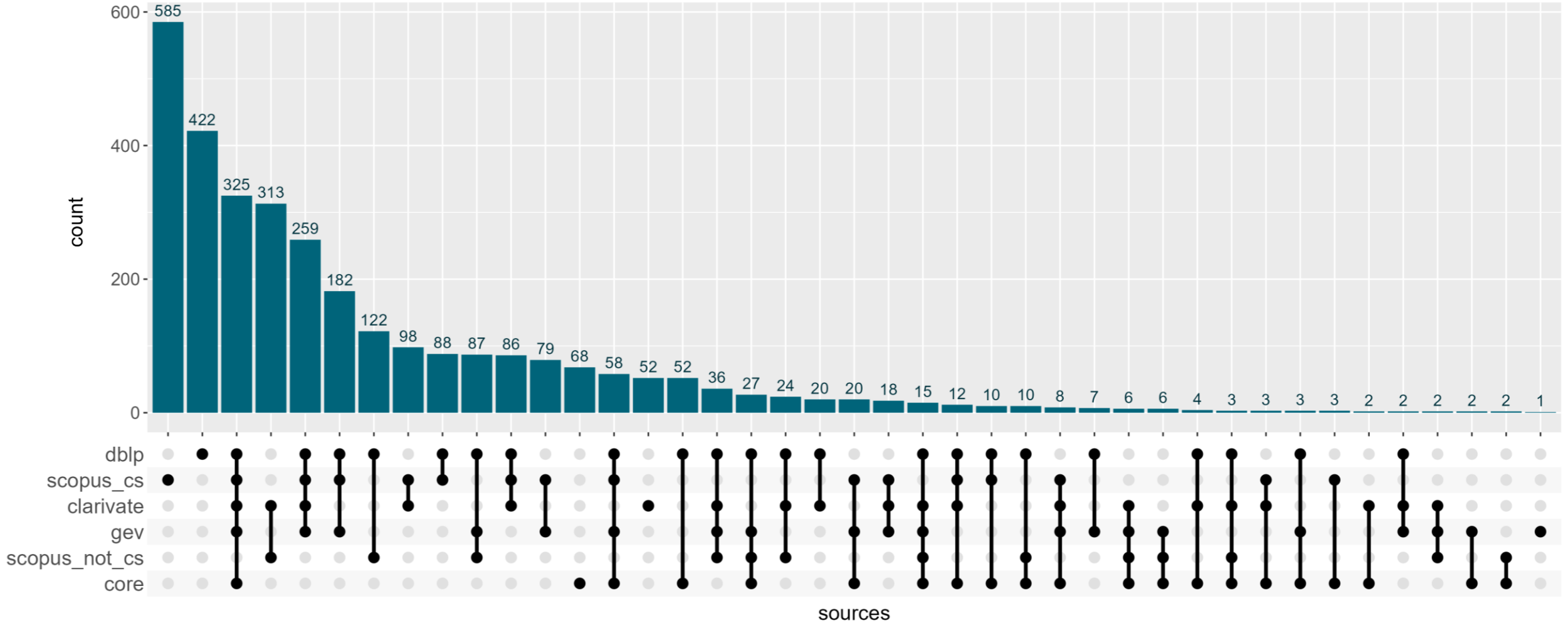
# INSIGHTS: CORE VS DBLP



# INTERSECTION BETWEEN SOURCES



# INTERSECTIONS BETWEEN SOURCES



# **REPLICABILITY AND DATA AVAILABILITY**

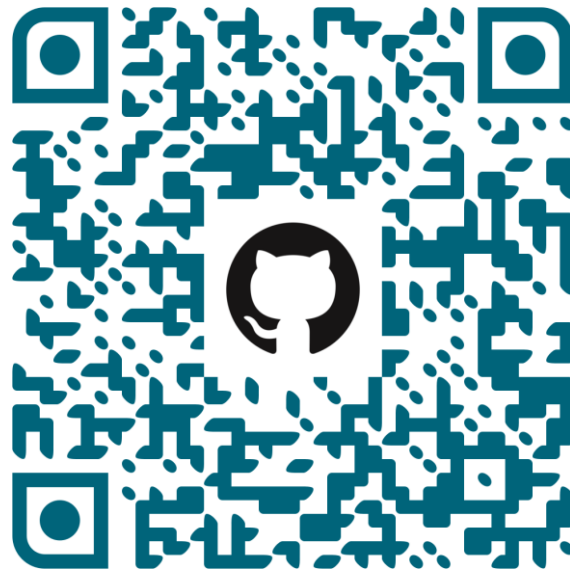


# SOURCE CODE FOR REPLICATION

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](mailto:luigiliberolucio.starace@unina.it) if you're interested!
- The Excel file comes with an handy slicer to filter data

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

# **THIS PRESENTATION**

- This presentation is available on my personal website: