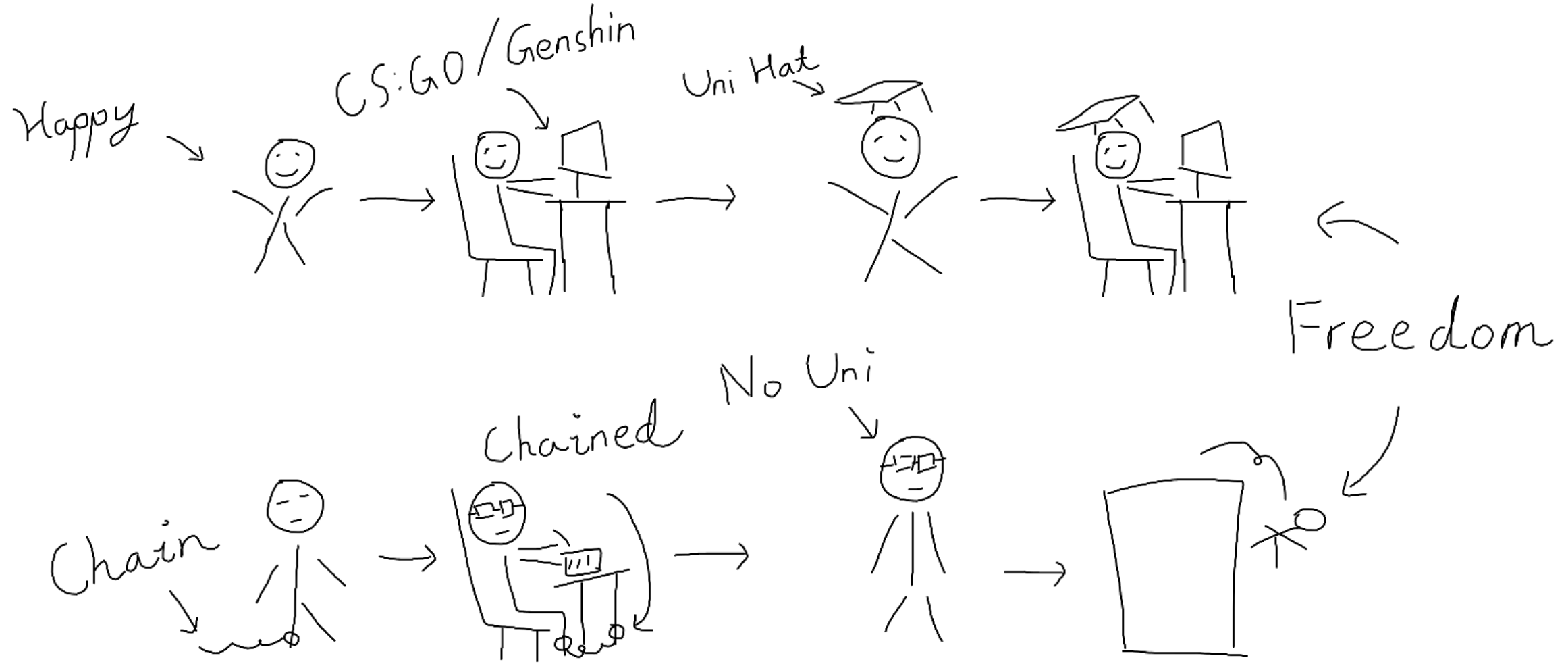


Educational Inequality

Step by Step

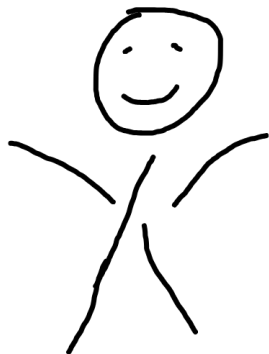
Know the Difference



Interesting fact: One of my classmates jumped and died in this July.

Know the why

$$\text{Enrollment rate} = \frac{\text{number of winner}}{\text{number of dreamer}} \times 100\%$$



Uni Winner: 631,267
Uni Dreamer: 673,844

Enrollment rate: 94%

Source (2019): [高等学校卒業生数・大学（学部）志願者数・大学（学部）入学定員の推移](#), 文部科学省



Uni Winner: 4,679,358
Uni Dreamer: 12,910,000

Enrollment rate: 36%

Source 1 (2023): [今年全国高考报名1291万人](#), 中华人民共和国教育部

Source 2 (2023): [各级各类学历教育学生情况](#), 中华人民共和国教育部



->

Country	Enrollment rate
Russia	150%
Thailand	112%
Japan	94%
Brazil	73%
South Korea	71%
Finland	66%
Italy	62%
Indonesia	54%
Malaysia	46%
India	41%
China	36%

Ukraine 54%



“Why >100% ?”: Because there are many foreign enrollments. i.e. >14% of the Tajik students study in a Russian university.

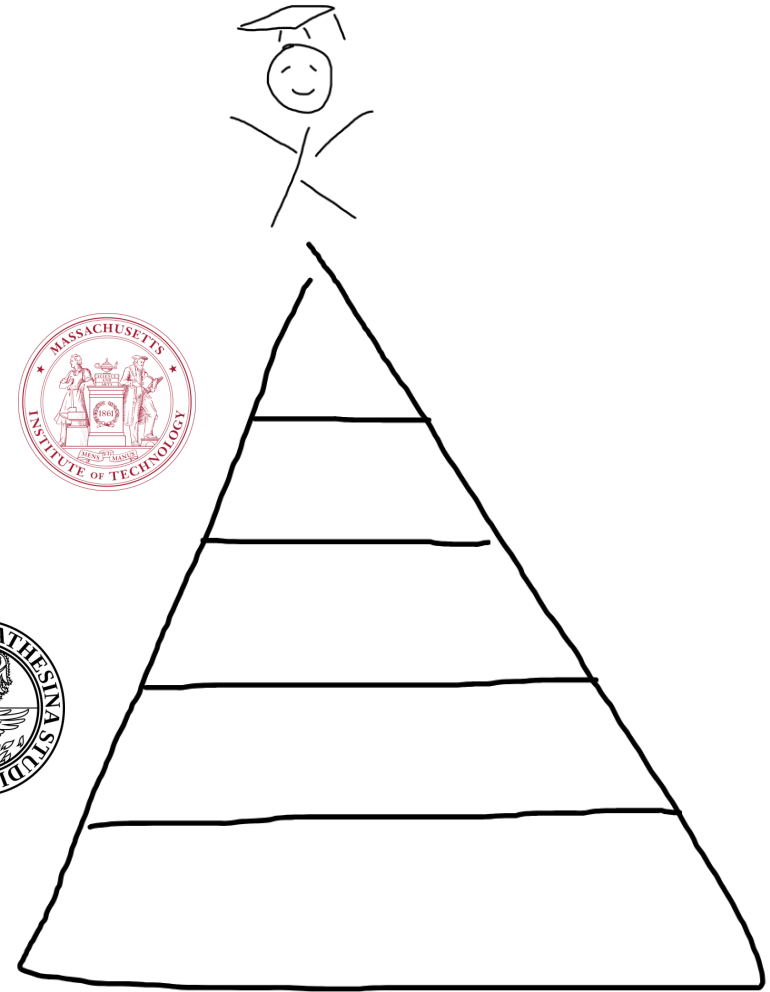
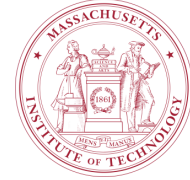
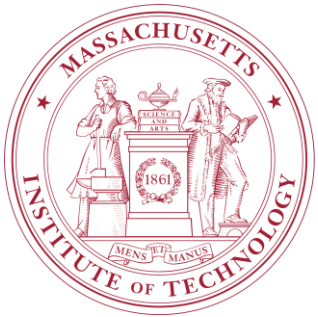


Interesting fact: There is only one university in Mauritania (a country in Africa), while its population is over 4 million.

... And more ...

We know that

So ...



We can build a pyramid!

Meet the Pyramid

This pyramid is built based on “Spend per Student” and “Student per Teacher”

Country	University	Year	€/Student	Student/Ac.Stuff	Total Income, €	Ac.Staff	Student
IT	Sant'Anna School of Advanced Studies of Pisa (SSSA)	2022	93533	2.1	€ 76,603,690	393	819
IT	Scuola Normale Superiore (SNS)	2022	99722	2.9	€ 64,021,570	218	642
IT	University of Padova (UNIPD)	2022	56128	5.6	€ 715,010,067	2268	12739
IT	Bocconi University	2023	19269	21.9	€ 291,098,453	689	15107
IT	University of Genova	2022	13685	19.4	€ 360,460,467	1355	26339
IT	University of Trento (UNITN)	2023	12764	19.9	€ 209,455,095	824	16410
IT	University of Modena and Reggio Emilia (UNIMORE)	2022	12598	21.3	€ 253,060,701	944	20087
IT	University of Rome Tor Vergata	2022	11271	22.4	€ 330,933,638	1310	29362
IT	University of Milan (UNIMI)	2022	10721	23.6	€ 640,822,754	2538	59773
IT	Polytechnic University of Milan	2022	12152	29.5	€ 582,806,128	1627	47959
IT	University of Pavia (UNIPV)	2021	10452	26.8	€ 251,080,695	896	24023
IT	University of Trieste (UNITS)	2022	10063	26.7	€ 173,093,242	644	17201
IT	University of Naples Federico II (UNINA)	2022	9262	25.7	€ 681,246,368	2867	73553
IT	University of Florence (UNIFI)	2022	9009	28.3	€ 459,478,287	1800	51000
IT	University of Bologna (UNIBO)	2022	9072	28.7	€ 879,831,965	3382	96984
IT	University of Milano-Bicocca (UNIMIB)	2022	9378	36.5	€ 307,976,956	900	32841
IT	Polytechnic University of Turin	2021	7460	32.6	€ 296,151,444	1217	39700
IT	University of Pisa (UNIPi)	2023	7712	34.6	€ 405,512,751	1518	52583
IT	University of Parma (UNIPR)	2022	7413	33.3	€ 237,228,536	960	32000
IT	University of Turin (UNITO)	2022	7369	34.1	€ 596,878,425	2377	81000
IT	Sapienza University of Rome	2022	7207	34.2	€ 880,317,965	3576	122143
IT	University of Roma Tre	2021	6194	36.4	€ 201,622,056	893	32549

By the way, in France they have some unis with the S:T ratio more than 100:1 :

Country	University	Year	€/Student	Student/Ac.Stuff	Total Income, €	Ac.Staff	Student
FR	University of Nantes	2020	9635	164.4	€ 356,500,000	225	37000



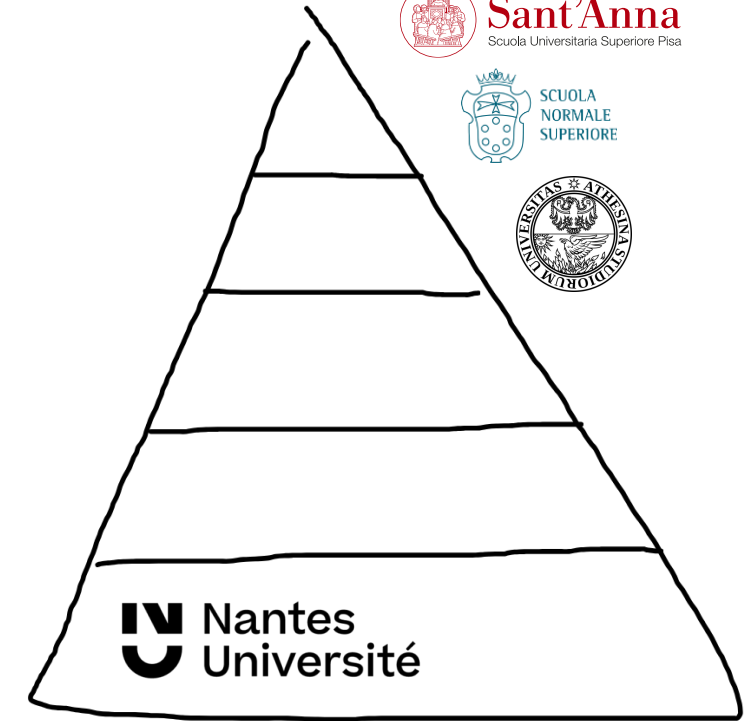
Complete list: <https://github.com/clareClaymore2001/EU.UniRanks>



Interesting fact: In a ranch, the “Cow per Worker” ratio is around 100.

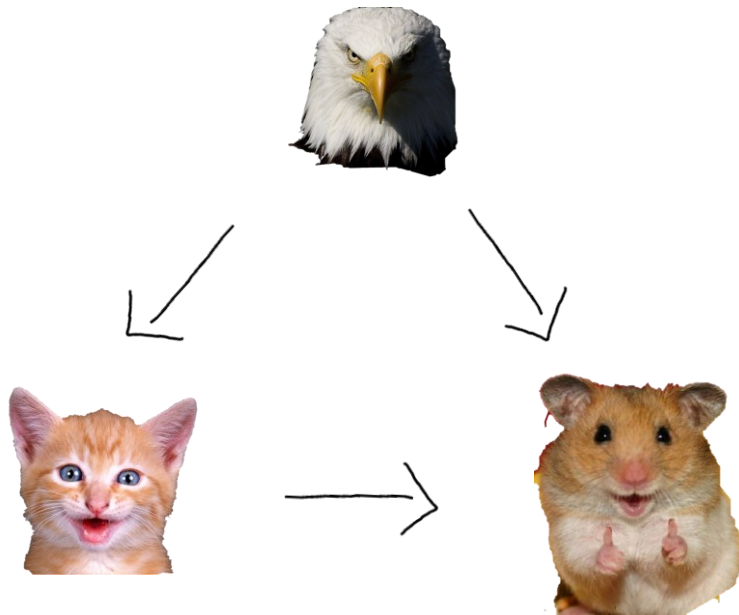


Sant'Anna
Scuola Universitaria Superiore Pisa

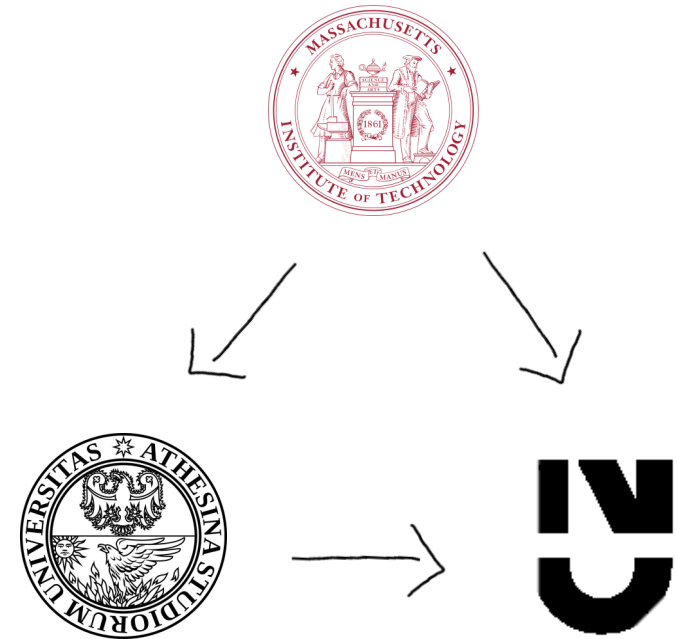


Improve the Pyramid

Pyramid based on foodchain



So...



A multi-dimensional pyramid!

Idea

The construction principle of the pyramid

We know:

All the universities tend to hire the PhD who graduated from a better university as their professor

So we know:

An university which only receives PhD from other universities but not produces PhD to other universities is at a lower position, so as the contrary

And then we know:

Based on the **“PhD -> Position”** hiring flow,

we can build the pyramid!

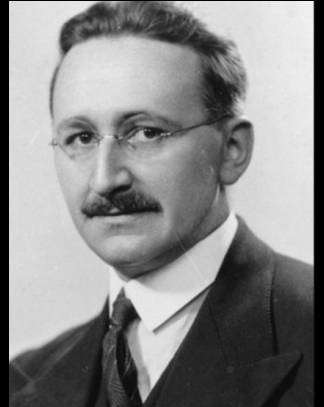


More over: The same principle for “Bachelor -> Master” flow, all the bachelor students tend to apply for a better university to study their master

And now, something hardcore

“The direction of the flow of people is the direction of civilization.”

—— Hayek



Article: Quantifying hierarchy and dynamics in US faculty hiring and retention

DOI: [10.1038/s41586-022-05222-x](https://doi.org/10.1038/s41586-022-05222-x)

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Article | [Open access](#) | Published: 21 September 2022

Quantifying hierarchy and dynamics in US faculty hiring and retention

[K. Hunter Wapman](#) , [Sam Zhang](#), [Aaron Clauset](#) & [Daniel B. Larremore](#) 

[Nature](#) **610**, 120–127 (2022) | [Cite this article](#)

168k Accesses | **97** Citations | **1180** Altmetric | [Metrics](#)

Database

Step by step tutorial to get a clear hiring flow

Step 1: Meet ORCID

Choose the database from ORCID, which includes profiles from more than 14m scholars | [See: Wikipedia](#)

Step 2: Obtain a clear dataset

2.1: Extract the data | [See: personal_data_all.csv](#)

2.2: Using the database from ROR to pair the unis and use some keywords to pair their titles (we know that many people didn't fill their profiles accurately)
| [See: personal_data_raw_paired.csv, personal_data_raw_paired.csv](#)
| [Keywords: ROR_data.csv, role_title.csv](#)

Step 3: Get the flows

3.1: Now we sort the experience of every person by time, and we select the ones who were studying PhD in an university with a professor position in an university later on
3.2: Count for all the flows | [See: organization_flow_all.csv](#)

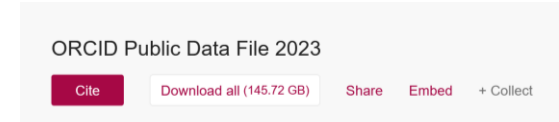
Now we have a clear hiring flow

Count	OriDisOrgID	DesDisOrgID	OriCou	DesCou	OriCity	DesCity	OriOrgName	DesOrgName	OriOrgType	DesOrgType
4394	https://ror.org/00pjdza24	https://ror.org/00pjdza24	US	US	Oakland	Oakland	University of California System	University of California System	education	education
4326	https://ror.org/04cw6st05	https://ror.org/04cw6st05	GB	GB	London	London	University of London	University of London	education	education
2953	https://ror.org/034t30j35	https://ror.org/034t30j35	CN	CN	Beijing	Beijing	Chinese Academy of Sciences	Chinese Academy of Sciences	government	government
2546	https://ror.org/05sqd3t97	https://ror.org/05sqd3t97	US	US	Tallahassee	Tallahassee	State University System of Florida	State University System of Florida	education	education
2289	https://ror.org/057zh3y96	https://ror.org/057zh3y96	JP	JP	Tokyo	Tokyo	The University of Tokyo	The University of Tokyo	education	education
2159	https://ror.org/0561zqn56	https://ror.org/0561zqn56	US	US	Columbus	Columbus	University System of Ohio	University System of Ohio	education	education
2129	https://ror.org/04h9pn542	https://ror.org/04h9pn542	KR	KR	Seoul	Seoul	Seoul National University	Seoul National University	education	education
1952	https://ror.org/01gek1696	https://ror.org/01gek1696	US	US	Austin	Austin	The University of Texas System	The University of Texas System	education	education
1902	https://ror.org/035b05819	https://ror.org/035b05819	DK	DK	Copenhagen	Copenhagen	University of Copenhagen	University of Copenhagen	education	education
1867	https://ror.org/0566a8c54	https://ror.org/0566a8c54	US	US	Chapel Hill	Chapel Hill	University of North Carolina System	University of North Carolina System	education	education
1811	https://ror.org/05f950310	https://ror.org/05f950310	BE	BE	Leuven	Leuven	KU Leuven	KU Leuven	education	education
1806	https://ror.org/01ej9dk98	https://ror.org/01ej9dk98	AU	AU	Melbourne	Melbourne	University of Melbourne	University of Melbourne	education	education
1792	https://ror.org/02kpeqv85	https://ror.org/02kpeqv85	JP	JP	Kyoto	Kyoto	Kyoto University	Kyoto University	education	education
1717	https://ror.org/013meh722	https://ror.org/013meh722	GB	GB	Cambridge	Cambridge	University of Cambridge	University of Cambridge	education	education

And now, something hardcore

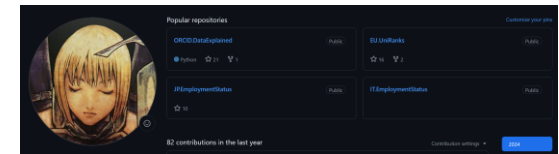
Original database Link:

https://orcid.figshare.com/articles/dataset/ORCID_Public_Data_File_2023/24204912



Opensource code Link:

<https://github.com/clareClaymore2001/ORCID.DataExplained>



I use Python by the way

Clear dataset Link:

<https://www.kaggle.com/datasets/leeantoyf/orcid-hiring-flow>

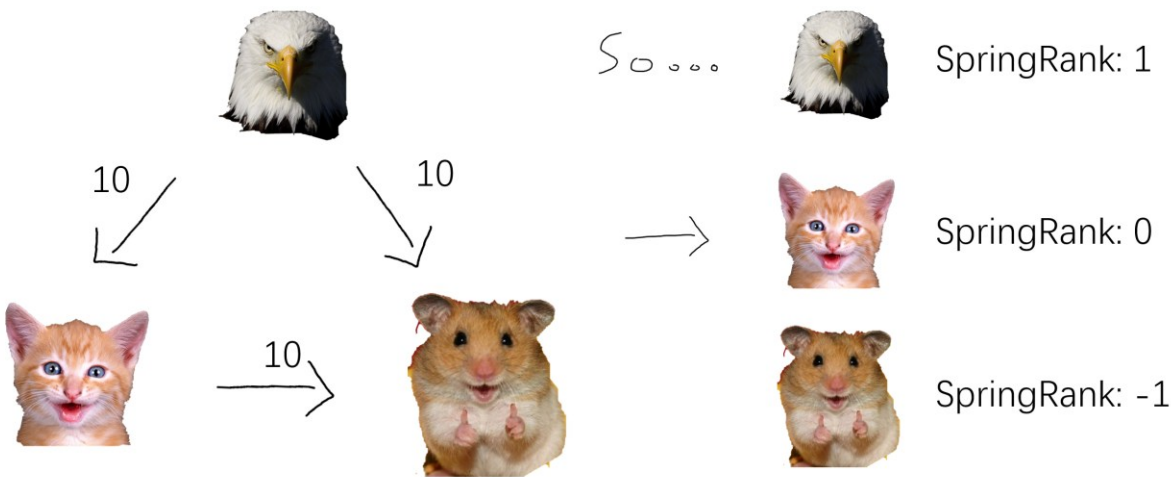
ORCID Hiring Flow

Add a subtitle Edit

Algorithm

Article: A physical model for efficient ranking in networks
DOI: [10.1126/sciadv.aar8260](https://doi.org/10.1126/sciadv.aar8260)

SpringRank: to calculate the relative position in the pyramid



Now we can get the SpringRank based on the hiring flow

OrgSpringRank	OrgID	OrgCou	OrgCity	OrgName	OrgType	Count
0.738026181	https://ror.org/00pjdza24	US	Oakland	University of California System	education	34670
0.946990224	https://ror.org/04cw6st05	GB	London	University of London	education	24932
0.950162053	https://ror.org/034t30j35	CN	Beijing	Chinese Academy of Sciences	government	15531
0.679572097	https://ror.org/05sqd3t97	US	Tallahassee	State University System of Florida	education	14899
0.614629855	https://ror.org/01gek1696	US	Austin	The University of Texas System	education	14572
0.715365969	https://ror.org/0561zqn56	US	Columbus	University System of Ohio	education	14063
0.995074155	https://ror.org/013meh722	GB	Cambridge	University of Cambridge	education	13160
0.607585952	https://ror.org/0566a8c54	US	Chapel Hill	University of North Carolina System	education	11578
0.821525124	https://ror.org/03ydkyb10	US	Madison	University of Wisconsin System	education	10122
0.899516976	https://ror.org/05e94g991	US	Urbana	University of Illinois System	education	9652
1.121707311	https://ror.org/057zh3y96	JP	Tokyo	The University of Tokyo	education	9651
0.731637676	https://ror.org/017wcm924	US	Atlanta	University System of Georgia	education	9225
0.81801534	https://ror.org/00f54p054	US	Stanford	Stanford University	education	8791
0.939849555	https://ror.org/027m9bs27	GB	Manchester	University of Manchester	education	8439
0.838406387	https://ror.org/03dbr7087	CA	Toronto	University of Toronto	education	8313

A physical model for efficient ranking in networks

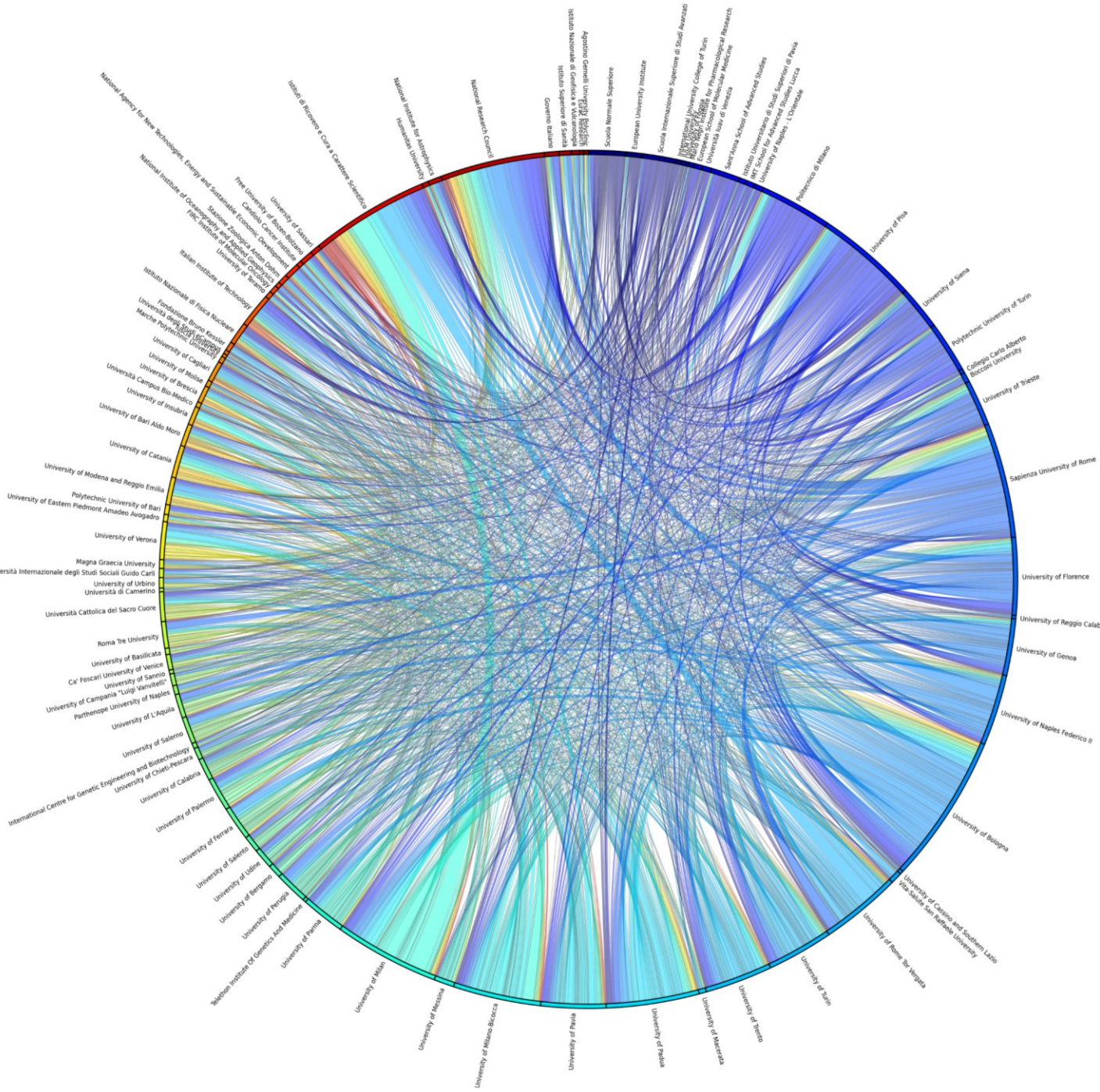
SpringRank in Italy

OrgSpringRank	OrgID	OrgCity	OrgName	OrgType	Count
1.449340202	https://ror.org/03aydme10	IT Pisa	Scuola Normale Superiore	education	487
1.307399286	https://ror.org/0031wrj91	IT Florence	European University Institute	education	997
1.290831965	https://ror.org/01tevnk56	IT Siena	University of Siena	education	472
1.272933289	https://ror.org/004ize387	IT Trieste	Scuola Internazionale Superiore di Studi Avanzati	education	672
1.220368889	https://ror.org/025602r80	IT Pisa	Sant'Anna School of Advanced Studies	education	421
1.19335893	https://ror.org/035gh3a49	IT Lucca	IMT School for Advanced Studies Lucca	education	104
1.177600814	https://ror.org/01e6ksd91	IT Venice	Università Iuav di Venezia	education	98
1.167061132	https://ror.org/05290cv24	IT Naples	University of Naples Federico II	education	927
1.126373268	https://ror.org/03ad39j10	IT Pisa	University of Pisa	education	1206
1.125997094	https://ror.org/01q9h8k89	IT Naples	University of Naples - L'Orientale	education	126
1.121350541	https://ror.org/02be6w209	IT Rome	Sapienza University of Rome	education	1626
1.110604506	https://ror.org/0005w8d69	IT Camerino	Università di Camerino	education	99
1.068214885	https://ror.org/03c44v465	IT Bari	Polytechnic University of Bari	education	223
1.063977322	https://ror.org/00bgk9508	IT Turin	Polytechnic University of Turin	education	1364
1.061616153	https://ror.org/01nffqt88	IT Milan	Politecnico di Milano	education	2646
1.046511218	https://ror.org/04jr1s763	IT Florence	University of Florence	education	973
1.042489899	https://ror.org/05ctdxz19	IT Messina	University of Messina	education	199
1.039084059	https://ror.org/0107c5v14	IT Genoa	University of Genoa	education	674
1.034646213	https://ror.org/02p77k626	IT Rome	University of Rome Tor Vergata	education	1059
1.004533799	https://ror.org/01gmqr298	IT Milan	Vita-Salute San Raffaele University	education	95
0.994694008	https://ror.org/00wj7c48	IT Milan	University of Milan	education	1045
0.990486268	https://ror.org/02kqnp86	IT Caserta	University of Campania "Luigi Vanvitelli"	education	119
0.980609178	https://ror.org/01ynf4891	IT Milan	University of Milano-Bicocca	education	1082
0.975454897	https://ror.org/00s6t1f81	IT Pavia	University of Pavia	education	725
0.960850472	https://ror.org/02n742c10	IT Trieste	University of Trieste	education	476
0.954129737	https://ror.org/01111rn36	IT Bologna	University of Bologna	education	2055
0.948031375	https://ror.org/0192m2k53	IT Fisciano	University of Salerno	education	395
0.941910737	https://ror.org/00240q980	IT Padua	University of Padua	education	1420
0.937884295	https://ror.org/05ht0mh31	IT Udine	University of Udine	education	258
0.929769642	https://ror.org/05crlpb27	IT Milan	Bocconi University	education	173
0.919934235	https://ror.org/041zgm14	IT Ferrara	University of Ferrara	education	401
0.918586172	https://ror.org/00x27da85	IT Perugia	University of Perugia	education	413
0.907853038	https://ror.org/048tbm396	IT Turin	University of Turin	education	887
0.90465766	https://ror.org/00qjza05	IT Chieti	University of Chieti-Pescara	education	142
0.886852102	https://ror.org/01j9p1r26	IT L'Aquila	University of L'Aquila	education	239
0.884122325	https://ror.org/05trd4x28	IT Trento	University of Trento	education	823
0.883001411	https://ror.org/02k7wn190	IT Parma	University of Parma	education	440
0.852377463	https://ror.org/044k9ta02	IT Palermo	University of Palermo	education	342
0.837986366	https://ror.org/03a64bh57	IT Catania	University of Catania	education	399
0.823374781	https://ror.org/03fcl0k60	IT Lecce	University of Salento	education	172
0.821992538	https://ror.org/003109y17	IT Cagliari	University of Cagliari	education	319
0.812765899	https://ror.org/02rc97e94	IT Rende	University of Calabria	education	291
0.789190759	https://ror.org/02mbd5571	IT Bergamo	University of Bergamo	education	115
0.783750223	https://ror.org/05vfdq29	IT Rome	Roma Tre University	education	243
0.747600209	https://ror.org/027ynra39	IT Bari	University of Bari Aldo Moro	education	297
0.730110997	https://ror.org/00s409261	IT Varese	University of Insubria	education	160
0.684078093	https://ror.org/02d4c4y02	IT Modena	University of Modena and Reggio Emilia	education	266
0.681074093	https://ror.org/02q2d2610	IT Brescia	University of Brescia	education	160
0.637075379	https://ror.org/0530bdk91	IT Catanzaro	Magna Graecia University	education	96
0.634578665	https://ror.org/01q8bbq23	IT Rome	Libera Università Internazionale degli Studi Sociali	education	123
0.625940032	https://ror.org/03h7r5v07	IT Milan	Università Cattolica del Sacro Cuore	education	384
0.607676622	https://ror.org/04yzxz566	IT Venice	Ca' Foscari University of Venice	education	165
0.60044391	https://ror.org/039bp8j42	IT Verona	University of Verona	education	486
0.377090338	https://ror.org/01bnjbv91	IT Sassari	University of Sassari	education	127
0.275812348	https://ror.org/012ajp527	IT Bolzano	Free University of Bozen-Bolzano	education	195

Visualization

SpringRank in Italy

OrgSpring	OrgID	OrgCity	OrgName	OrgType	Cou
1.449340202	https://ror.org/03aydme10	IT Pisa	Scuola Normale Superiore	education	487
1.307399286	https://ror.org/0031wjr91	IT Florence	European University Institute	education	997
1.290831965	https://ror.org/01tevnk56	IT Siena	University of Siena	education	472
1.272933289	https://ror.org/004fze387	IT Trieste	Scuola Internazionale Superiore di Studi Avanzati	education	672
1.220368889	https://ror.org/025602r80	IT Pisa	Sant'Anna School of Advanced Studies	education	421
1.19335893	https://ror.org/035gh3a49	IT Lucca	IMT School for Advanced Studies Lucca	education	104
1.177600814	https://ror.org/01e6ksd91	IT Venice	Università luav di Venezia	education	98
1.167061132	https://ror.org/05290cv24	IT Naples	University of Naples Federico II	education	927
1.126373268	https://ror.org/03ad39j10	IT Pisa	University of Pisa	education	1206
1.125997094	https://ror.org/01q9h8k89	IT Naples	University of Naples - L'Orientale	education	126
1.121350541	https://ror.org/02be6w209	IT Rome	Sapienza University of Rome	education	1626
1.110604506	https://ror.org/0005w8d69	IT Camerino	Università di Camerino	education	99
1.068214885	https://ror.org/03c44v465	IT Bari	Polytechnic University of Bari	education	223
1.063977322	https://ror.org/00b9k9508	IT Turin	Polytechnic University of Turin	education	1364
1.061616153	https://ror.org/01nffqt88	IT Milan	Politecnico di Milano	education	2646
1.046511218	https://ror.org/04jr1s763	IT Florence	University of Florence	education	973
1.042489899	https://ror.org/05ctdxz19	IT Messina	University of Messina	education	199
1.039084059	https://ror.org/0107c5v14	IT Genoa	University of Genoa	education	674
1.034646213	https://ror.org/02p77k626	IT Rome	University of Rome Tor Vergata	education	1059
1.004533799	https://ror.org/01gmqr298	IT Milan	Vita-Salute San Raffaele University	education	95
0.994694008	https://ror.org/00wc7c48	IT Milan	University of Milan	education	1045
0.990486268	https://ror.org/02kqnp86	IT Caserta	University of Campania "Luigi Vanvitelli"	education	119
0.980609178	https://ror.org/01ynf4891	IT Milan	University of Milano-Bicocca	education	1082
0.975454897	https://ror.org/00s6t1f81	IT Pavia	University of Pavia	education	725
0.960850472	https://ror.org/02n742c10	IT Trieste	University of Trieste	education	476
0.954129737	https://ror.org/01111rn36	IT Bologna	University of Bologna	education	2055
0.948031375	https://ror.org/0192m2k53	IT Fisciano	University of Salerno	education	395
0.941910737	https://ror.org/00240q980	IT Padua	University of Padua	education	1420
0.937884295	https://ror.org/05ht0mh31	IT Udine	University of Udine	education	258
0.929769642	https://ror.org/05crjpb27	IT Milan	Bocconi University	education	173
0.919934235	https://ror.org/041zkgm14	IT Ferrara	University of Ferrara	education	401
0.918586172	https://ror.org/00x27da85	IT Perugia	University of Perugia	education	413
0.907853038	https://ror.org/048t8bm396	IT Turin	University of Turin	education	887
0.90465766	https://ror.org/00qjgza05	IT Chieti	University of Chieti-Pescara	education	142
0.886852102	https://ror.org/01j9p1r26	IT L'Aquila	University of L'Aquila	education	239
0.884122325	https://ror.org/05trd4x28	IT Trento	University of Trento	education	823
0.883001411	https://ror.org/02k7wn190	IT Parma	University of Parma	education	440
0.852377463	https://ror.org/044k9ta02	IT Palermo	University of Palermo	education	342
0.837986366	https://ror.org/03a64bh57	IT Catania	University of Catania	education	399
0.823374781	https://ror.org/03fc1k060	IT Lecce	University of Salento	education	172
0.821992538	https://ror.org/003109y17	IT Cagliari	University of Cagliari	education	319
0.812765899	https://ror.org/02rc97e94	IT Rende	University of Calabria	education	291
0.789190759	https://ror.org/02mbd5571	IT Bergamo	University of Bergamo	education	115
0.783750223	https://ror.org/05vfdgq29	IT Rome	Roma Tre University	education	243
0.747600209	https://ror.org/027ymra39	IT Bari	University of Bari Aldo Moro	education	297
0.730110997	https://ror.org/00s409261	IT Varese	University of Insubria	education	160
0.684078093	https://ror.org/02d4c4y02	IT Modena	University of Modena and Reggio Emilia	education	266
0.681074093	https://ror.org/02q2d2610	IT Brescia	University of Brescia	education	160
0.637075379	https://ror.org/0530bdk91	IT Catanzaro	Magna Graecia University	education	96
0.634578665	https://ror.org/01q8b6q23	IT Rome	Libera Università Internazionale degli Studi Sociali	education	123
0.625940032	https://ror.org/03h7r5v07	IT Milan	Università Cattolica del Sacro Cuore	education	384
0.607676622	https://ror.org/04yzxz566	IT Venice	Ca' Foscari University of Venice	education	165
0.60044391	https://ror.org/039bp8j42	IT Verona	University of Verona	education	486
0.377090338	https://ror.org/01bnjbv91	IT Sassari	University of Sassari	education	127
0.275812348	https://ror.org/012ajp527	IT Bolzano	Free University of Bozen-Bolzano	education	195



One last step

Step by step to calculate the inequality in a country

Step 1: Calculate the adjusted count and the adjusted SpringRank

Simply just the sum of the flow count and the sum of the SpringRank of all the universities in a country

Step 2: Calculate the adjusted average in every country

$$\text{Adjusted Average} = \frac{\text{Adjusted SpringRank}}{\text{Adjusted Count}}$$

Step 3: Calculate the adjusted variance in every country

In every university

$$\text{Adjusted Variance} = \frac{\sum (\text{Unadjusted Count} \times (\text{Unadjusted SpringRank} - \text{Adjusted Average})^2)}{\text{Adjusted Count}}$$

Step 4: Times the variance 100 to get a better view

Benefit of the adjusted variance

We know that different university has different sizes, so adjusted variance is better than unadjusted variance

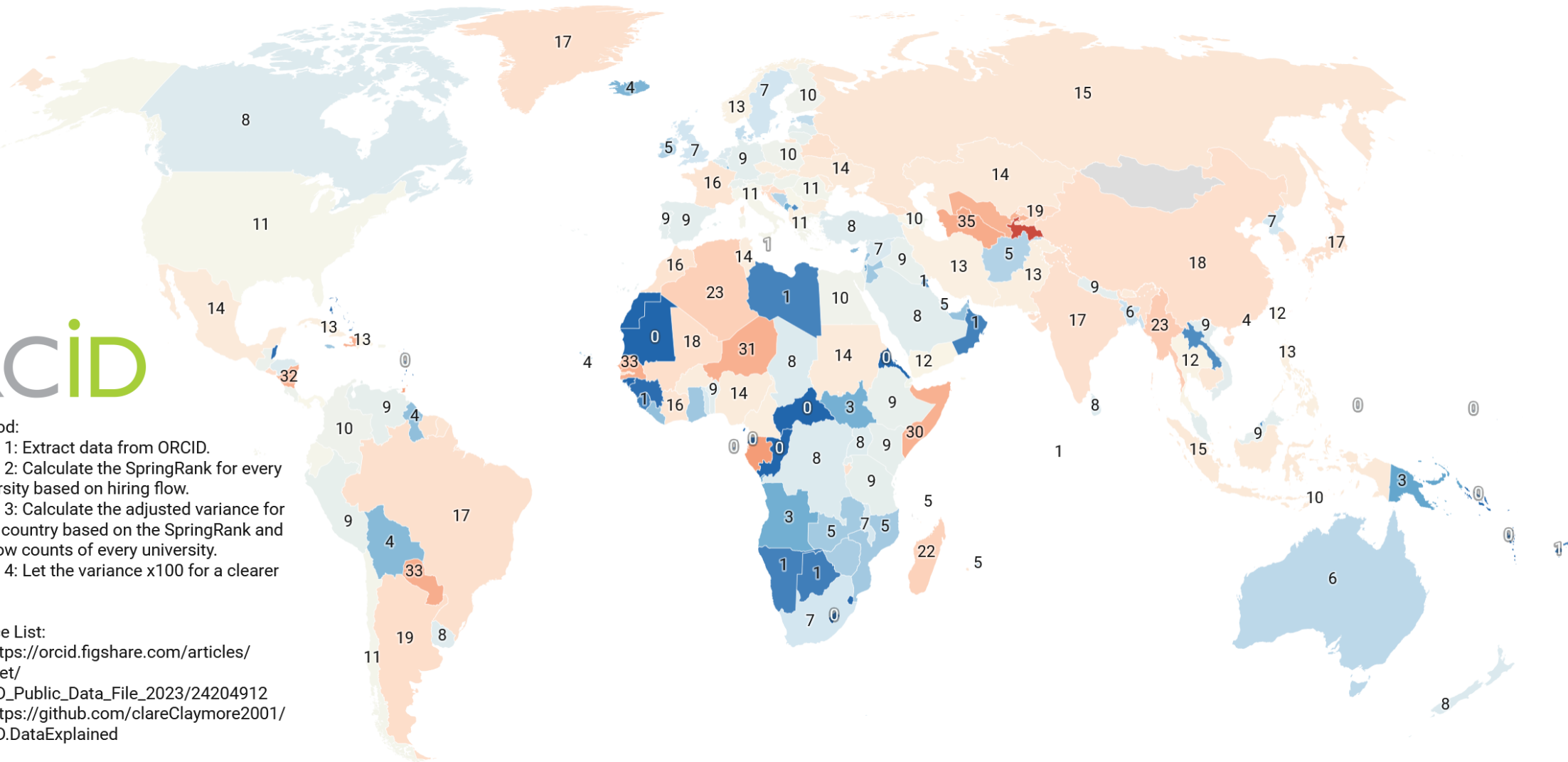
Country	SpringRankAdjusted	CountAdjusted	AverageAdjusted	VarianceAdjusted
AT	6974.32967	11297	0.617361217	9.832069508
AU	45088.9728	70903	0.635924754	5.742801929
BD	-2963.75783	10570	-0.280393361	6.330579985
BE	12885.55196	16100	0.800344842	7.682975085
BR	32558.32468	58248	0.558960388	17.11398481
CA	44297.39237	73971	0.598848094	7.749851915
CH	14770.22457	23461	0.629565004	9.398283303
CN	60412.4816	149208	0.404887684	18.04297129
DE	41970.34554	58749	0.71440102	8.679324446
DK	10334.49975	19512	0.529648409	6.045662777
ES	73926.66305	77303	0.956323339	8.659951845
FI	10539.97014	15701	0.67129292	10.23457294
FR	36691.847	39488	0.929189804	15.55202969
GB	157848.7506	209167	0.754654179	6.643162391
GR	5654.049936	12820	0.441033536	10.75634304
ID	-3424.014179	13207	-0.259257528	14.64499673
IE	7235.182877	13122	0.551378058	5.174783316
IL	5845.736245	9776	0.59796811	9.221868617
IN	83433.79004	113105	0.737666682	17.04940423
IR	11799.45355	34512	0.341894227	13.17630485
IT	32727.77261	37073	0.882792669	11.06319026
JP	51017.50501	70657	0.722044596	16.53891123
KR	19916.64147	43503	0.457822253	16.41135407
MX	3643.454201	11292	0.322658006	14.30759824
MY	8010.579944	17026	0.47049101	8.694011102
NG	-2234.2306	17378	-0.128566613	14.09769863
NL	26770.09632	31299	0.855301969	7.59262038
NO	3208.991873	10915	0.293998339	12.82812362
NZ	6798.299387	9968	0.682012378	7.50929953
PK	-554.4364237	13144	-0.042181712	13.47744186
PL	14077.38671	19943	0.705881097	10.19026264
PT	8627.100564	16216	0.532011628	8.759872227
RU	15090.01065	17149	0.879935311	15.25601103
SE	15532.68237	25911	0.599462868	6.659560325
SG	5021.347431	12223	0.410811375	10.19837305
TR	11328.35246	40413	0.280314564	8.106608823
TW	3199.146402	23670	0.135156164	11.85711857
US	311323.2183	559842	0.556091215	11.28058941
ZA	8239.661376	22540	0.365557293	6.75957089

Inequality in Higher Education



- Step 1: Extract data from ORCID.
- Step 2: Calculate the SpringRank for every university based on hiring flow.
- Step 3: Calculate the adjusted variance for every country based on the SpringRank and the flow counts of every university.
- Step 4: Let the variance $\times 100$ for a clearer view.

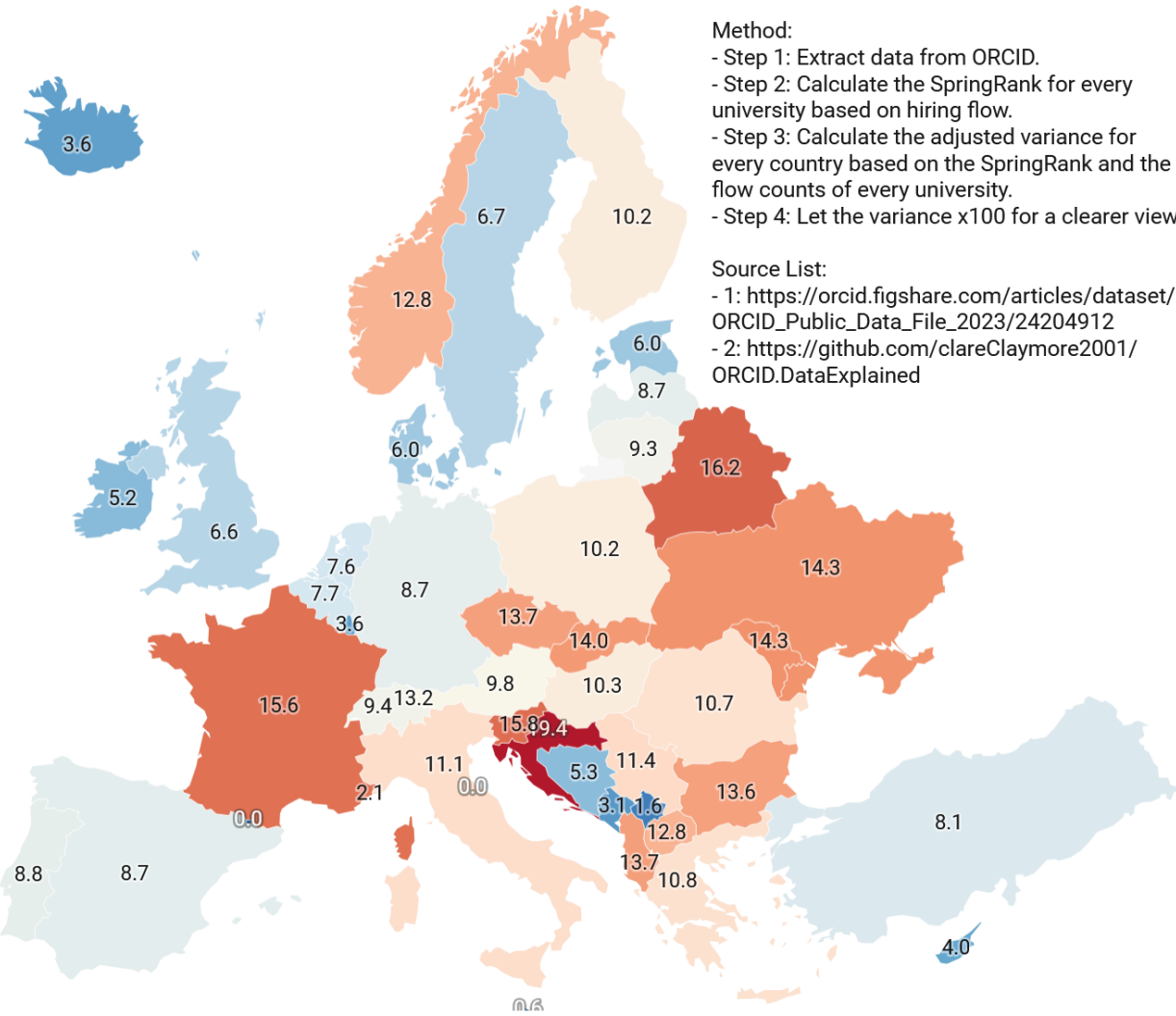
- 1: https://orcid.figshare.com/articles/dataset/ORCID_Public_Data_File_2023/24204912
- 2: <https://github.com/clareClaymore2001/ORCID.DataExplained>



Interesting fact: There is only one university in Mauritania (a country in Africa), so its inequality is zero.

Understand the data

Inequality in Higher Education



Know the Difference

6.0

Estonia



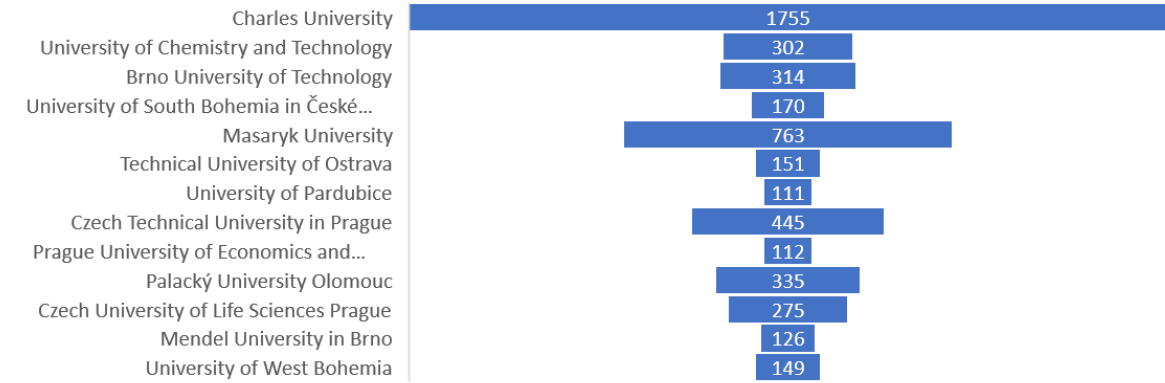
9.4

Switzerland



13.7

Czechia



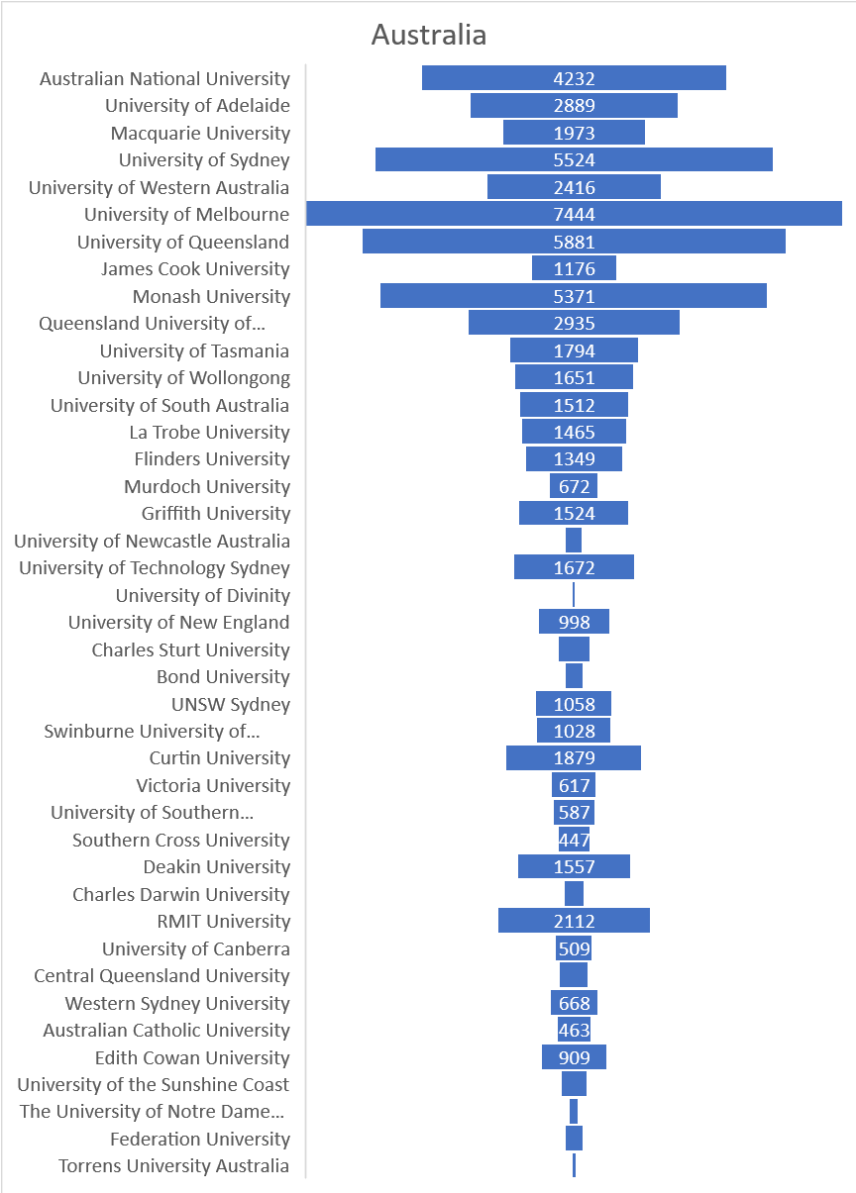
19.4

Croatia

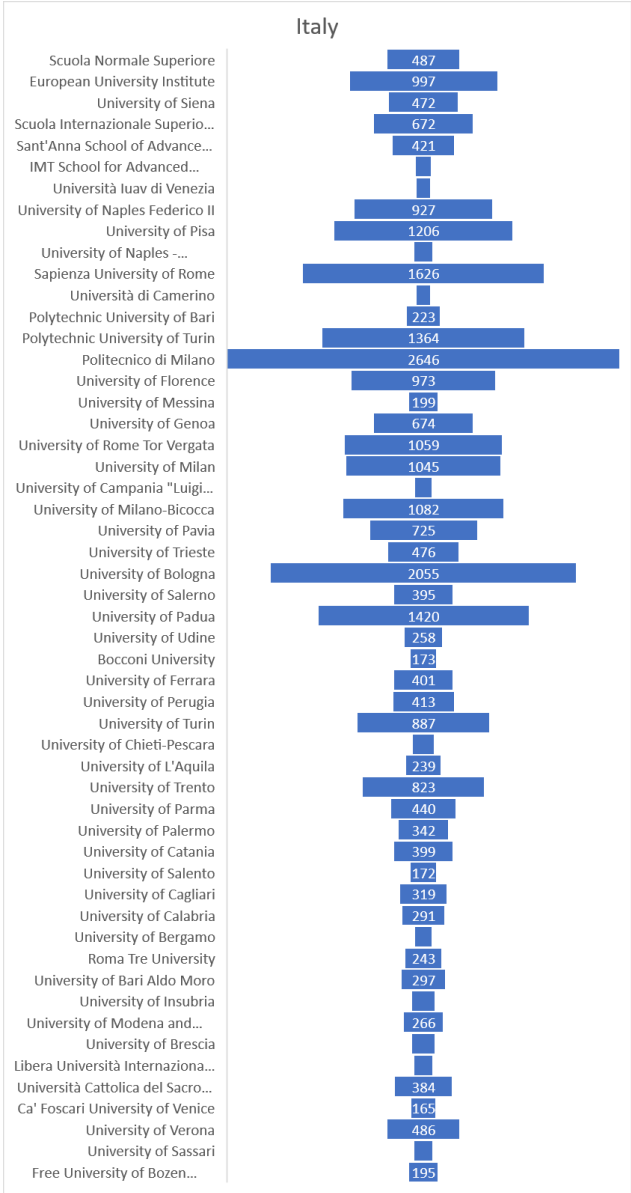


Understand the data 2

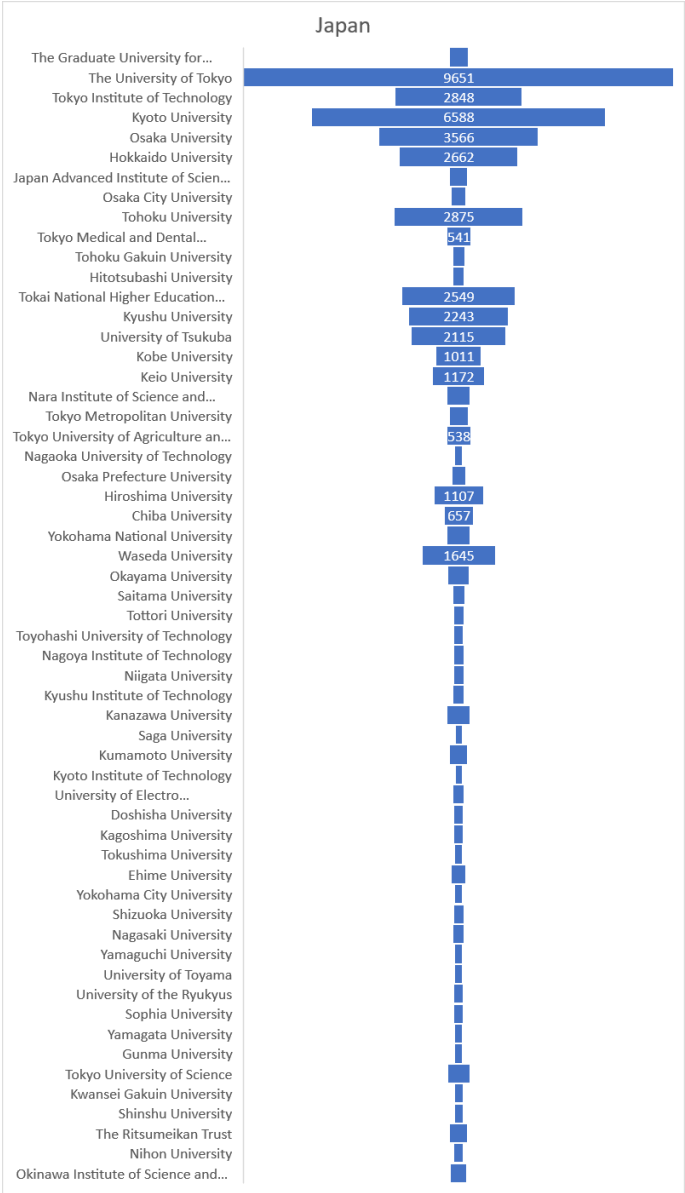
6



11



17



Understand the data 3

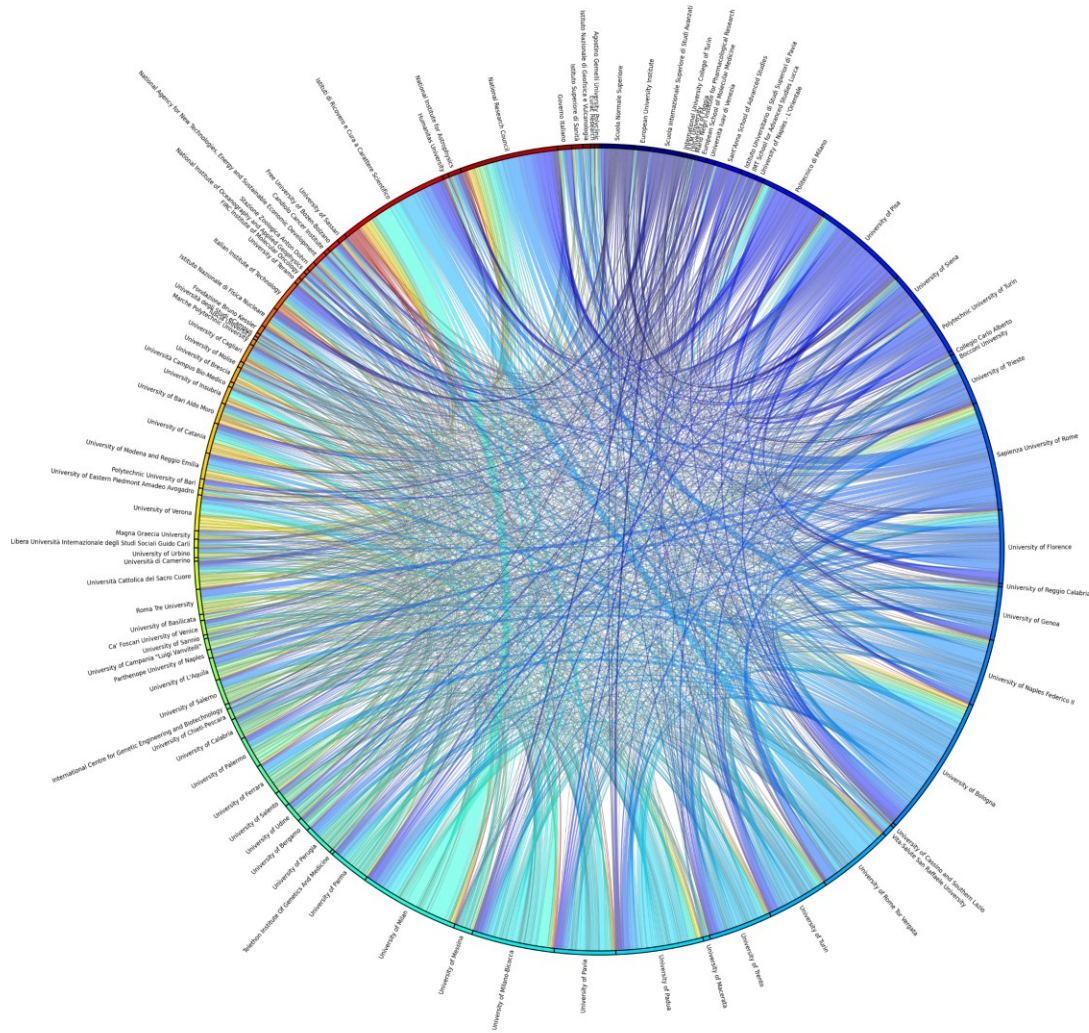


In Tajikistan, their only good university is a branch university from Russia

Inequality: 88

OrgSpringRank	OrgID	Cou	City	OrgName	OrgType	Count	Tajikistan	
1.758882309	https://ror.org/050a13t43	TJ	Dushanbe	Moscow State University	education	42	Moscow State University	42
1.101515055	https://ror.org/015dapv07	TJ	Dushanbe	Tajik State Pedagogical University	education	1	Tajik State Pedagogical University	1
1.051230972	https://ror.org/01k1ffv36	TJ	Dushanbe	Finance and Economics Institute of Tajikistan	education	1	Finance and Economics Institute...	1
0.057469313	https://ror.org/00y792711	TJ	Dushanbe	Technological University of Tajikistan	education	2	Technological University of...	2
0.041113226	https://ror.org/045cv1381	TJ	Dushanbe	Tajik Agrarian University Shirinsho Shotemur	education	1	Tajik Agrarian University...	1
0.018130158	https://ror.org/04bccg972	TJ	Dushanbe	Tajik National University	education	7	Tajik National University	7
0	https://ror.org/02r6cx512	TJ	Khūjand	Khujand State University	education	2	Khujand State University	2
-0.049735456	https://ror.org/01c1kpg39	TJ	Dushanbe	Tajik Technical University named after academic M.S.Osimi	education	2	Tajik Technical University name...	2
-0.127098367	https://ror.org/00v76vw28	TJ	Dushanbe	Tajik State University of Commerce	education	3	Tajik State University of...	3
-0.257941493	https://ror.org/05hphhy26	TJ	Khorugh	University of Central Asia	education	1	University of Central Asia	1
-0.342689371	https://ror.org/02emvsg33	TJ	Dushanbe	Tajik State Medical University	education	11	Tajik State Medical University	11
-0.358419848	https://ror.org/00sk4kx55	TJ	Dushanbe	Russian-Tajik Slavonic University	education	1	Russian-Tajik Slavonic University	1

Thanks for listening!



George Orwell



"All animals are equal,
but some animals
are more equal than others."