

Método Bili

Uma otimização da Bibliometria

Anderson Queiroz
Marco Reis

Senai Cimatec
Centro de Competência em Robótica e
Sistemas Autônomos
anderson.vale@fbter.org.br
marcoreis@fieb.org.br



Como vocês realizam as buscas por artigos?

WEB OF SCIENCE



ORCID



RESEARCHERID

Scopus®



researchfish

SRI
Surrey Research Insight

MENDELEY



THE CONVERSATION



Academia.edu
share research



ResearchGate

Google™
Scholar



PUBLONS
EVALUATING ACADEMIC RESEARCH

Pouco tempo para muito resultado

A screenshot of a Google Scholar search results page. The search term 'artigos importantes' has returned approximately 650,000 results (0.89 s). The results are filtered by 'Artigos'. The first result is a study titled 'Impactos da elaboração e revisão de artigos em revistas sistemáticas da literatura' by M.L.S. de Oliveira et al., published in 2014. It discusses the impact of article revision on the quality of systematic reviews. The second result is a study titled 'Estudos de revisão sistemática: um guia para síntese criteriosa da evidência científica' by S. Alves et al., published in 2007. It provides guidelines for systematic review synthesis. The third result is a study titled 'Importância do uso correto dos descritores nos artigos científicos' by R. Souza, P. Marinho, et al., published in 2006. It emphasizes the importance of correct descriptor use in scientific articles.

A screenshot of a Scopus search results page for the term 'solar energy'. The search has returned 105,248 document results. The results are displayed in a grid format with columns for 'Documents', 'Secondary documents', 'Analyze search results' (with a link to 'View search results displayed in various graph/formats'), 'View Mendeley Data (1,2064)', 'Search your library', and 'Sort by: Date (newest)'. The first result is a study titled 'Co2 photoflotation with hand-tail states assisted hole transport for階層式 solar water splitting' by Pan, L., Liu, Y., Yan, L., Li, J., Gritzel, M., Hagedorn, A., et al., published in 2018 in the journal Nature Communications.

A screenshot of a Google Scholar search results page for the term 'Dynamic path planning'. The search has returned 6,301 results. The results are displayed in a grid format with columns for 'Year', 'Show' (with options for 'All Results' and 'Open Access Only'), 'Select All on Page', 'Sort By: Relevance', and individual article cards. The first result is a conference paper titled 'An Extension of Dynamic Programming Algorithm in Robotic Path Planning' by Shanshan Ji, Laihe Yang, published in 2012 at the 2012 International Conference on Computer Science and Service System. The second result is a conference paper titled 'Dynamic programming field based environment learning and path planning for mobile robots' by Yuan Yuan, Zhiqiang Cao, Zengguang Hou, Min Tan, published in 2012 at the 2012 International Conference on Computer Science and Service System.

Tempo e precisão

A tecnologia existe para ajudar a nos tornar cada vez mais rápidos e precisos no que fazemos.

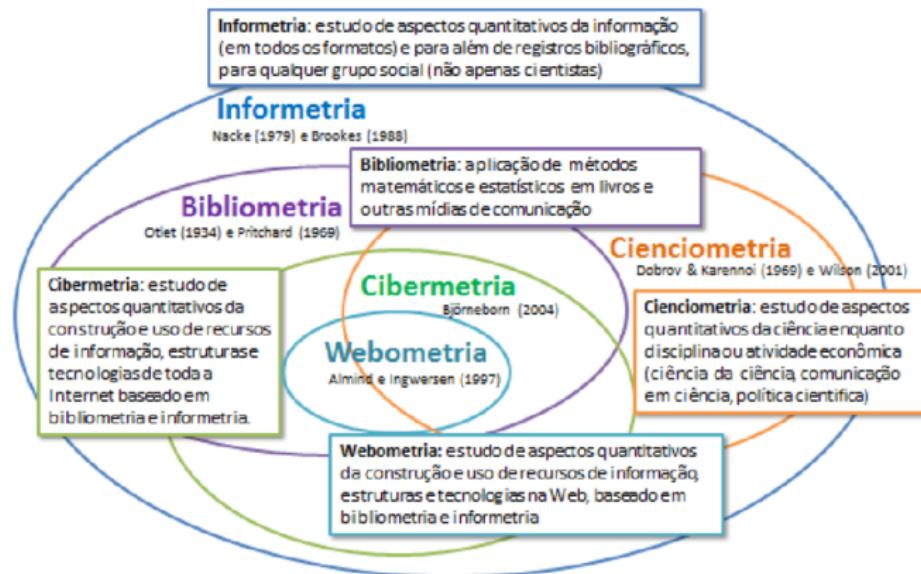
Fatores que impulsiona a ser rápido e preciso:

- ▶ Competitividade
- ▶ Prazo de entrega
- ▶ Concluir um trabalho



Existe algum método para melhorar a busca de artigos?

- ▶ Biblioteconomia
- ▶ Método BiLi

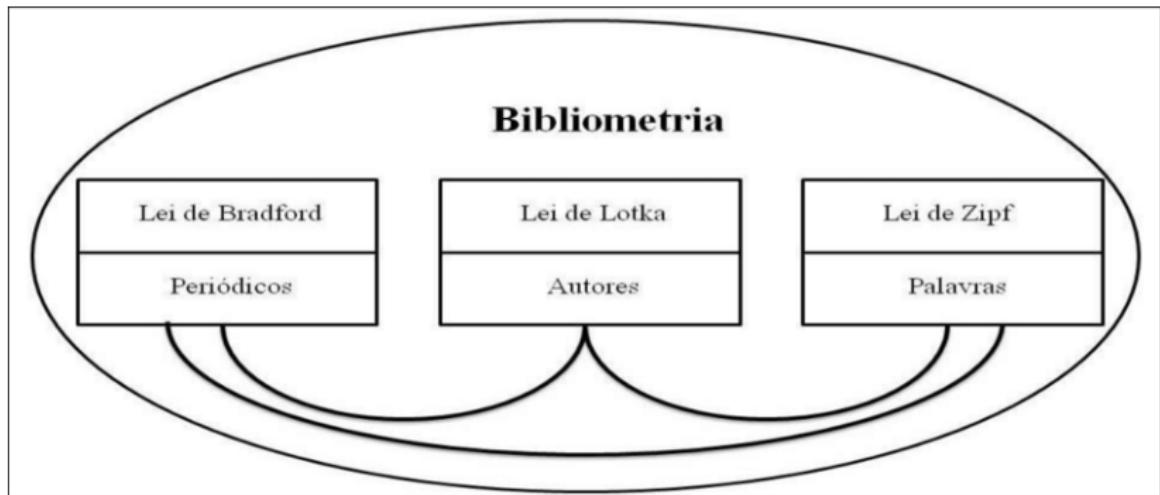


Bibliometria

- ▶ Aplica métodos estatísticos e matemáticos para analisar e construir indicadores sobre a dinâmica e evolução da informação científica e tecnológica.
- ▶ Medir o desenvolvimento, a qualidade e o impacto de uma série de artigos escolhidos.
- ▶ Paul Otlet, 1934



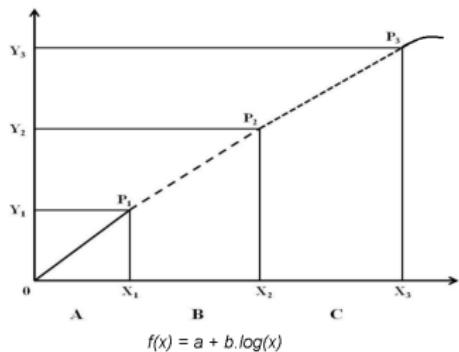
Três leis básicas



Lei de Bradford

Lei da dispersão

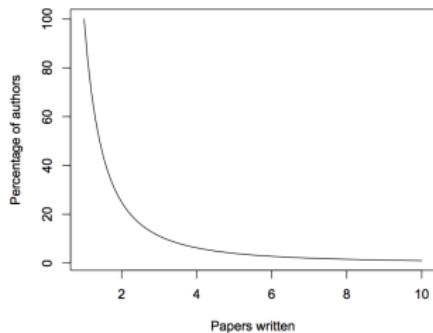
- ▶ Medir produtividade das periódicos
- ▶ Estabelecer núcleo e as áreas de dispersão
- ▶ Permite fazer a estimativa do grau de relevância de revistas de conhecimentos



Lei de Lotka

Lei do quadrado inverso

- ▶ Produtividade dos autores
- ▶ Relação entre o número de autores e o número de artigos publicados
- ▶ Estabelecer núcleo e as áreas de dispersão
- ▶ Permite fazer a estimativa do grau de relevância de revistas de conhecimentos
- ▶ Define as maiores contribuições dos pesquisadores

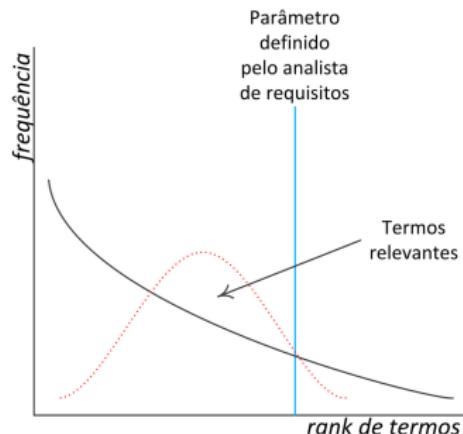


$$Y = \frac{C}{X^n}$$

Lei de Zipf

Lei do menor esforço

- ▶ Trata e mede a frequência de ocorrência de palavras em vários textos
- ▶ As palavras mais usadas indicam o assunto



Fator de Impacto

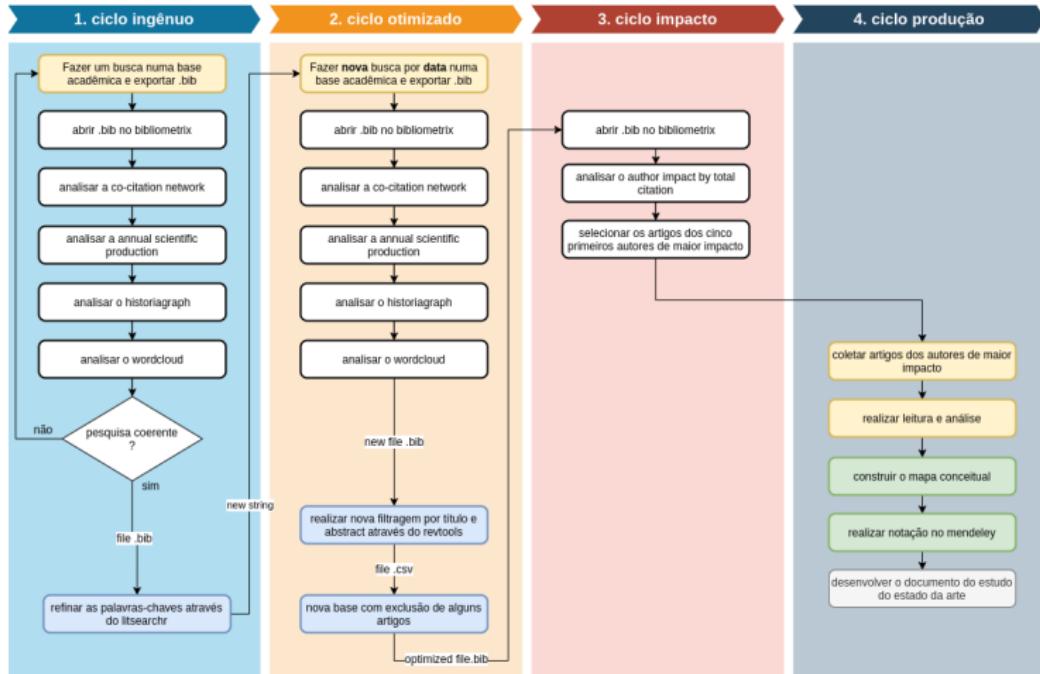
Medida que reflete o número médio de citações de artigos científicos publicados.
Avaliar a importância de um dado periódico em sua área.



Principais estudos da Bibliometria

Leis e Princípios	Focos de Estudo	Principais Aplicações
Lei de Bradford	periódicos	estimar o grau de relevância de periódicos
Lei de Lotka	autores	estimar o grau de relevância de autores
Leis de Zipf	palavras	indexação automática de artigos científicos e tecnológicos
Fator de Imediatismo ou de Impacto	citações	estimar o grau de relevância de artigos, cientistas e periódicos científicos
Acoplamento Bibliográfico	citações	estimar o grau de ligação de dois ou mais artigos
Co-citação	citações	estimar o grau de ligação de dois ou mais artigos
Obsolescência da Literatura	citações	estimar o declínio da literatura de determinada área do conhecimento
Vida-média	citações	estimar a vida-média de uma unidade da literatura de dada área do conhecimento

Método BiLi

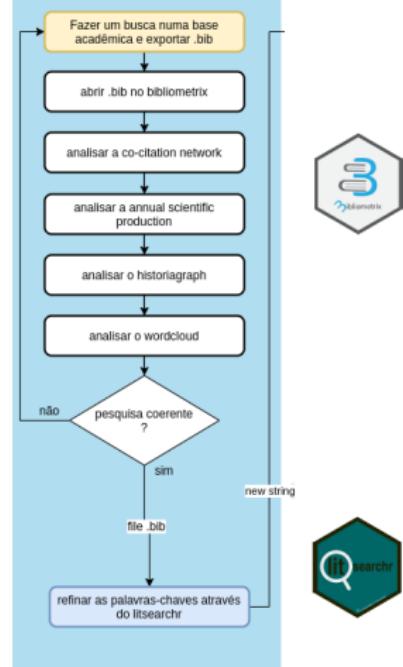


Pré-Requisito

- ▶ Instalar o R ≥ 3.5
- ▶ Instalar os pacotes do R
 - ▶ Bibliometrix
 - ▶ LitSearchR
 - ▶ RevTools
- ▶ Instalar o Mendeley
- ▶ Instalar o CMapTools

1º Ciclo

Ciclo Ingênuo



1º Ciclo - Busca

Fazer uma busca em uma base acadêmica e exportar .bib

- ▶ Web Of Science
- ▶ Scopus
- ▶ Dimension
- ▶ PubMed
- ▶ Cochrane Library

The screenshot shows a search results page from a database. At the top, it says "Showing 1-25 of 25,310 for Robot development". Below this are filters for Conferences (21,349), Books (75), Journals (3,094), Standards (4), Magazines, and Courses. The "Show" dropdown is set to "All Results". A "Select All on Page" checkbox is checked. The first result listed is "Development of a robot simulation system for remotely operating mining and robot performance verification" by Kuniaki Kawabata, Keita Suzuki, Mitsuhiro Iseki, Kazunori Horie, et al., presented at the 2017 14th International Conference on Ubiquitous Robots and Ambient Intelligence. It has 1049 citations. Below the result are buttons for "Abstract", "Citation", and "Export". An "Exportar resultados" dialog box is open in the foreground, showing options for RIS, BibTeX, Citação, and CSV, and checkboxes for "Esta página", "Itens selecionados", and "Todos os registros (max: 2000)".

1º Ciclo - Bibliometrix

Abrir o Bibliometrix no R

Atividades RStudio ▾

File Edit Code View Plots Session Build Debug Profile T

+ Go to file/function Addins ▾

Console Terminal Jobs ~/ ◊

```
> library(bibliometrix)
To cite bibliometrix in publications, please use:

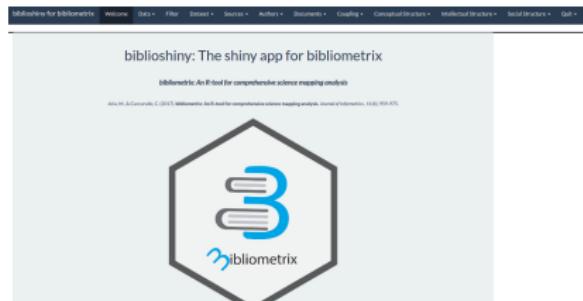
Aria, M. & Cuccurullo, C. (2017) bibliometrix: An R-tool for comprehensive science mapping analysis, Journal of Informetrics, 11(4), pp 959-975, Elsevier.
```

<http://www.bibliometrix.org>

Help us to keep Bibliometrix free to download and use by contributing with a small donation to support our research team (<https://bibliometrix.org/donate.html>)

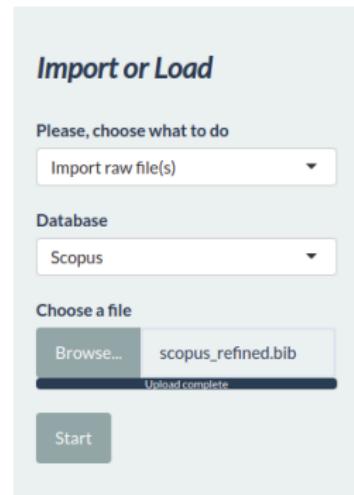
To start with the shiny web-interface, please digit:
biblioshiny()

```
> biblioshiny()
```



1º Ciclo - Bibliometrix

Importar o .bib



1º Ciclo - Bibliometrix

Visualização dos dados importados

Welcome Data Filter Dataset Sources Authors Documents Coupling Conceptual Structure Intellectual Structure Social Structure

Quit

Show 50 rows Print Search:

Import or Load

Please, choose what to do
 Database
 Choose a file

Upload complete

DOI	AU	DE	ID	C1	CR	JI
10.1007/978-981-15-4917-3_33	MAT DARUS IZAL-KHAFAJI AAM	CUCKOO SEARCH ALGORITHM; FLEXIBLE UNDERWATER MANIPULATOR; FLOWER POLLINATION ALGORITHM; PID CONTROLLER	BIOIMMETRICS; ELECTRIC CONTROL EQUIPMENT; FLEXIBLE MANIPULATORS; HEURISTIC METHODS; IMAGE PROCESSING; OPTIMIZATION; PARAMETER ESTIMATION; PROPORTIONAL	UNIVERSITI TEKNOLOGI MALAYSIA, JOHOR BAHRU, JOHOR, 81310, MALAYSIA	DARUS, I.Z.M., ZAHIDI RAHMAN, T.A., MAILAH, M., EXPERIMENTAL EVALUATION OF ACTIVE FORCE VIBRATION CONTROL OF A FLEXIBLE STRUCTURE USING SMART MATERIAL	SMART II SYST. TEC
10.1109/ICMA49215.2020.9239883	HE J,WEI Y,ZHAO Y,ZHENG Z,FU J	ACTIVE DISTURBANCE REJECTION CONTROL; ADRC; TERMINAL SLIDING MODE CONTROL; UNDERWATER	DISTURBANCE REJECTION; MANIPULATORS; ACTIVE DISTURBANCE REJECTION CONTROL; EXTERNAL DISTURBANCES; FLOW	HARBIN ENGINEERING UNIVERSITY, DEPARTMENT OF AUTOMATION, HARBIN, 150001, CHINA	GUSEV, A.L., GOLOVIN, E.S., ABOUT THE DEVELOPMENT OF A TECHNOLOGICAL COMPLEX WITH A MANIPULATOR FOR AN UNMANNED UNDERWATER VEHICLE (2019) IOP CONFERENCE	IEEE INT. MECHATRONICS AUTOM.

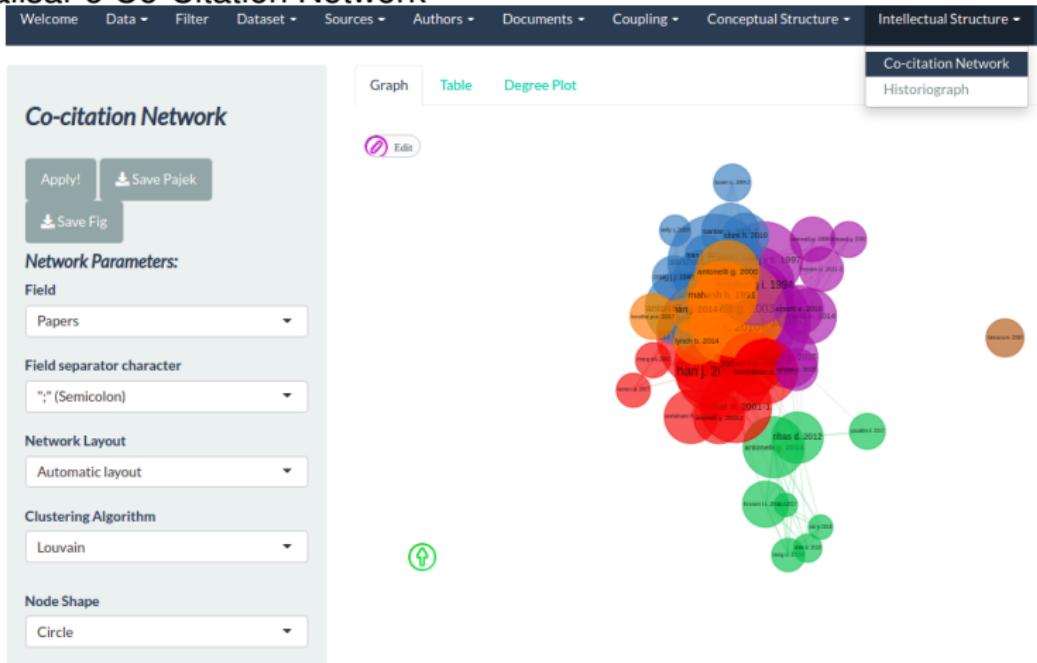
1º Ciclo - Bibliometrix

Analisar o Co-Citation Network

The screenshot shows the 'Co-citation Network' analysis section of the Bibliometrix software. At the top, there is a navigation bar with tabs: Welcome, Data, Filter, Dataset, Sources, Authors, Documents, Coupling, Conceptual Structure, and Intellectual Structure. The 'Intellectual Structure' tab is currently selected, with a dropdown menu showing 'Co-citation Network' and 'Historiograph'. Below the navigation bar, there are three tabs: Graph, Table, and Degree Plot. The 'Graph' tab is selected. On the left, there is a panel titled 'Co-citation Network' with buttons for 'Apply!', 'Save Pajek', and 'Save Fig'. Underneath, there are sections for 'Network Parameters' (Field set to 'Papers') and 'Field separator character' (set to ';' (Semicolon)).

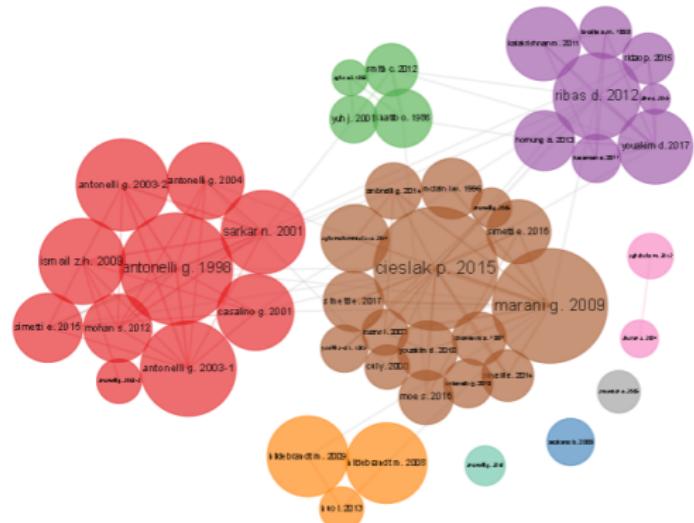
1º Ciclo - Bibliometrix

Analisar o Co-Citation Network



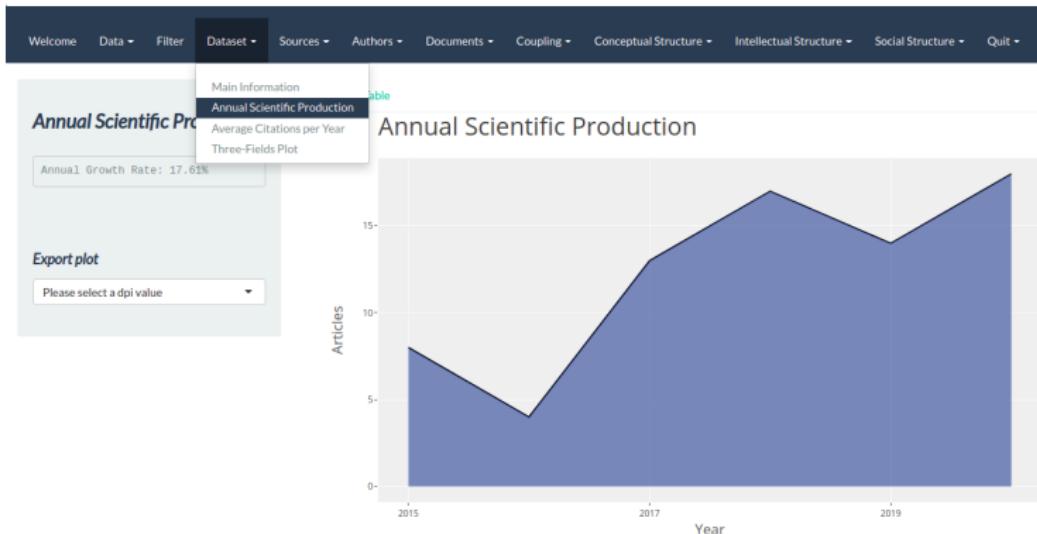
1º Ciclo - Bibliometrix

Analizar o Co-Citation Network



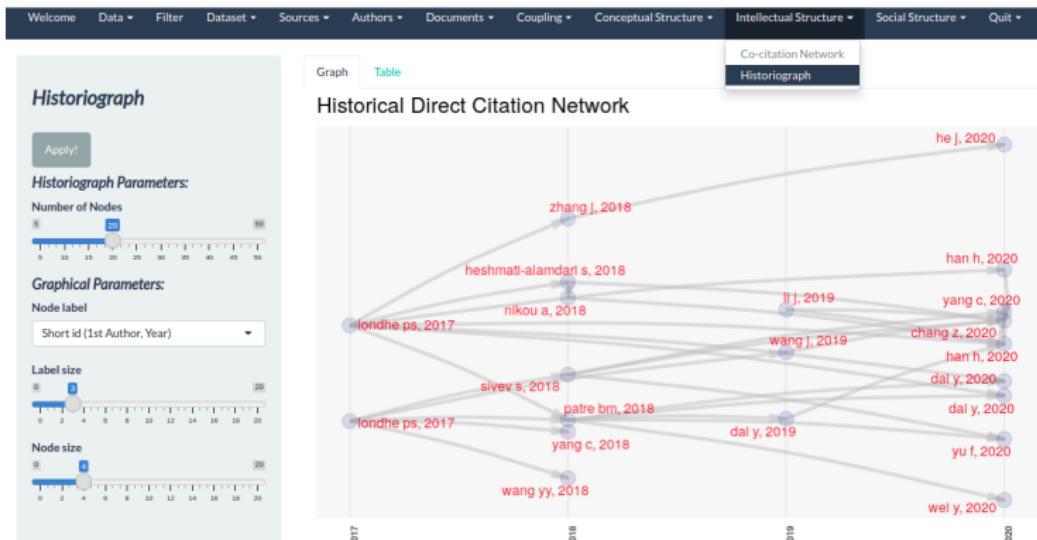
1º Ciclo - Bibliometrix

Analisar o Annual Scientific Production



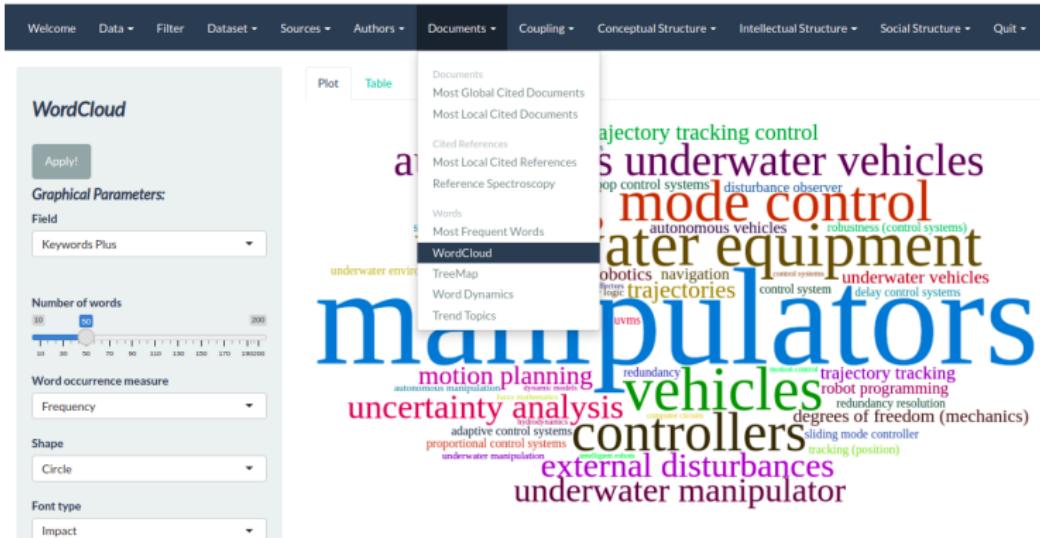
1º Ciclo - Bibliometrix

Analisar o Historiograph



1º Ciclo - Bibliometrix

Analisar o WordCloud



1º Ciclo - Bibliometrix

Analisar o WorldCloud



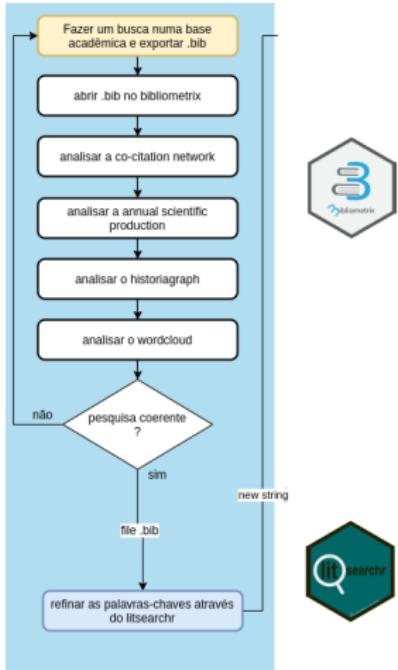
1º Ciclo - Bibliometrix

Analisar o WorldCloud



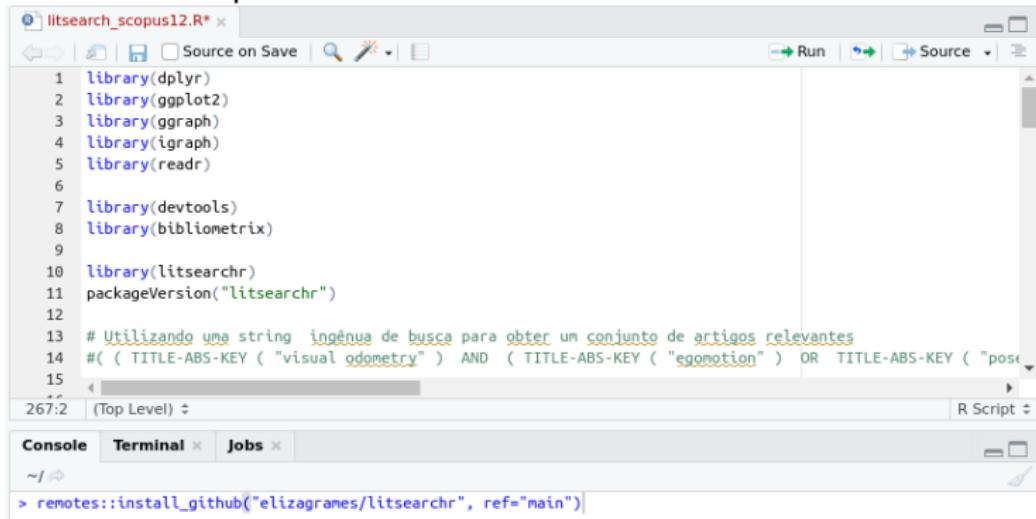
1º Ciclo

Ciclo Ingênuo



1º Ciclo - LitSearchR

É um pacote R para facilitar o desenvolvimento de estratégia de busca quase automática para revisões sistemáticas.



The screenshot shows the RStudio interface. The top panel displays the script file 'litsearch_scopus12.R'. The code in the script includes several library imports (dplyr, ggplot2, ggraph, igraph, readr, devtools, bibliometrix, litsearchr) and a package version check. A multi-line comment at the bottom describes a search strategy using TITLE-ABS-KEY terms. The bottom panel shows the 'Console' tab, which contains the command to install the 'litsearchr' package from GitHub.

```
library(dplyr)
library(ggplot2)
library(ggraph)
library(igraph)
library(readr)
library(devtools)
library(bibliometrix)
library(litsearchr)
packageVersion("litsearchr")

# Utilizando uma string ingênua de busca para obter um conjunto de artigos relevantes
#( (TITLE-ABS-KEY ("visual odometry")) AND (TITLE-ABS-KEY ("egomotion")) OR TITLE-ABS-KEY ("pose"))
remotes::install_github("elizagrames/litsearchr", ref="main")
```

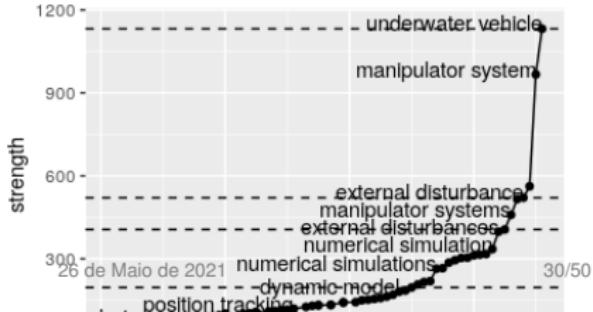
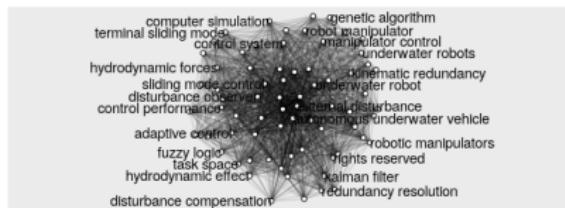
1º Ciclo - LitSearchR

Retorna um novo texto de busca

```
Console Terminal Jobs 
~/ 
This is going to write .txt files to your computer containing the search strings. 
Are you sure you want to write the files? 

1: yes 
2: no 

Selection: 1 
[1] "English is written" 
[1] "(\\\"manipulator system\\\" OR \\\"underwater manipulator\\\" OR \\\"vehicle manipulator system\\\" OR \\\"underwater vehicle manipulator system\\\") AND (\\\"underwater manipulator\\\" OR \\\"underwater robot\\\" OR \\\"underwater vehicle\\\" OR \\\"autonomous underwater\\\") AND (\\\"disturbance observer\\\" OR \\\"external disturbances\\\" OR \\\"motion planning\\\" OR \\\"trajectory tracking\\\" OR \\\"sliding mode control\\\"))" 
> |
```



1º Ciclo - LitSearchR

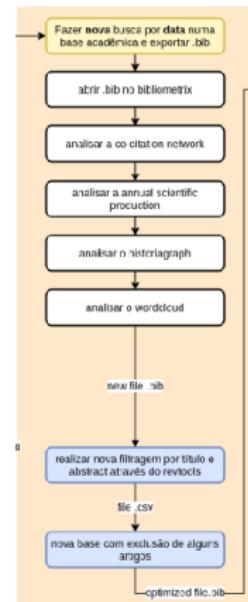
Refinar palavras chaves

```
Source on Save | Run | Source |   
1 search_directory <- "~/Documentos/AUM/litsearchr_AUM/apresentacao"  
2  
3 stopwrlds <- c("advances", "analyse", "analysed", "analyses")  
4  
5 grouped_terms <- list(  
6   manipulator=selected_terms[c(17, 10, 22, 20)],  
7   underwater=selected_terms[c(10, 11, 13, 12, 15)],  
8   techniques=selected_terms[c(3, 4, 6, 9, 8)]  
9 )  
10  
11 new_search_directory <- "~/Documentos/AUM/litsearchr_AUM/new"  
12  
13 important_titles <- c(  
14   "Collision detection for underwater ROV manipulator systems"  
15 )
```

12:1 (Top Level) R Script

2º Ciclo

Ciclo Otimizado



2º Ciclo - Nova Busca



Scopus

Search Sources Lists SciVal ↗



Advanced search

[Basic
Search](#)

[Advanced](#)

[Search tips](#)

Enter query string

("manipulator system" OR "underwater manipulator" OR "vehicle manipulator system" OR "underwater vehicle manipulator system") AND ("underwater manipulator" OR "underwater robot" OR "underwater vehicle" OR "autonomous underwater") AND ("disturbance observer" OR "external disturbances" OR "motion planning" OR "trajectory tracking" OR "sliding mode control")

[Outline query](#) [Add Author name / Affiliation](#) [Clear form](#) [Search](#)

2º Ciclo - Bibliometrix

Importar o novo .bib

Welcome Data Filter Dataset Sources Authors Documents Coupling Conceptual Structure Intellectual Structure Social Structure

Quit

Show 50 rows Print Search:

Import or Load

Please, choose what to do
Import raw file(s) ▾
Database Scopus
Choose a file
Browse... scopus_refined.bib
Upload complete
Start

DOI	AU	DE	ID	C1	CR	JI
10.1007/978-981-15-4917-3_33	MAT DARUS IZAL-KHAFAJI AAM	CUCKOO SEARCH ALGORITHM; FLEXIBLE UNDERWATER MANIPULATOR; FLOWER POLLINATION ALGORITHM; PID CONTROLLER	BIOIMMETRICS; ELECTRIC CONTROL EQUIPMENT; FLEXIBLE MANIPULATORS; HEURISTIC METHODS; IMAGE PROCESSING; OPTIMIZATION; PARAMETER ESTIMATION; PROPORTIONAL	UNIVERSITI TEKNOLOGI MALAYSIA, JOHOR BAHRU, JOHOR, 81310, MALAYSIA	DARUS, I.Z.M., ZAHIDI RAHMAN, T.A., MAILAH, M., EXPERIMENTAL EVALUATION OF ACTIVE FORCE VIBRATION CONTROL OF A FLEXIBLE STRUCTURE USING SMART MATERIAL	SMART II SYST. TEC
10.1109/ICMA49215.2020.9239883	HE J,WEI Y,ZHAO Y,ZHENG Z,FU J	ACTIVE DISTURBANCE REJECTION CONTROL; ADRC; TERMINAL SLIDING MODE CONTROL; UNDERWATER	DISTURBANCE REJECTION; MANIPULATORS; ACTIVE DISTURBANCE REJECTION CONTROL; EXTERNAL DISTURBANCES; FLOW	HARBIN ENGINEERING UNIVERSITY, DEPARTMENT OF AUTOMATION, HARBIN, 150001, CHINA	GUSEV, A.L., GOLOVIN, E.S., ABOUT THE DEVELOPMENT OF A TECHNOLOGICAL COMPLEX WITH A MANIPULATOR FOR AN UNMANNED UNDERWATER VEHICLE (2019) IOP CONFERENCE	IEEE INT. MECHATRONICS AUTOM.

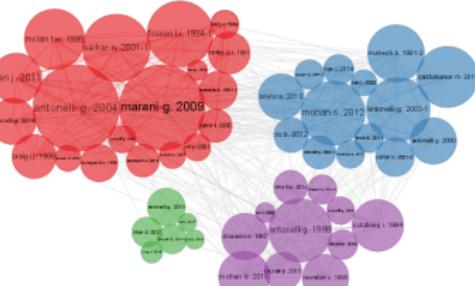
2º Ciclo - Bibliometrix

Analisar o Co-Citation Network

1º Ciclo



2º Ciclo

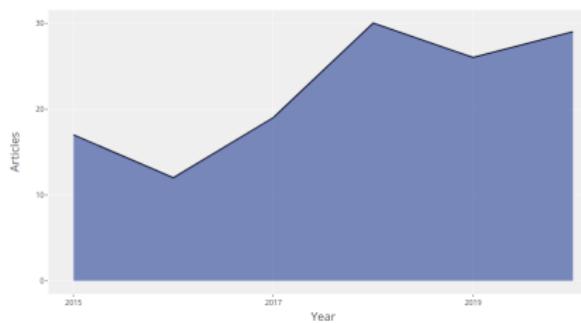


2º Ciclo - Bibliometrix

Analisar o novo Annual Scientific Production

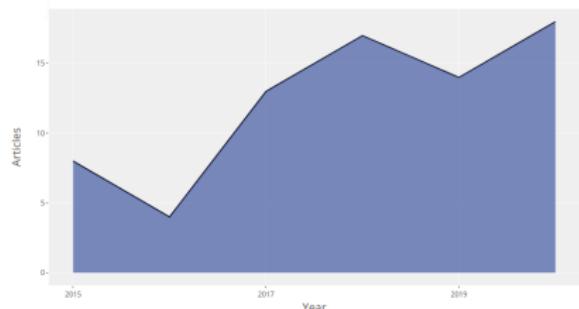
1º Ciclo

Annual Scientific Production



2º Ciclo

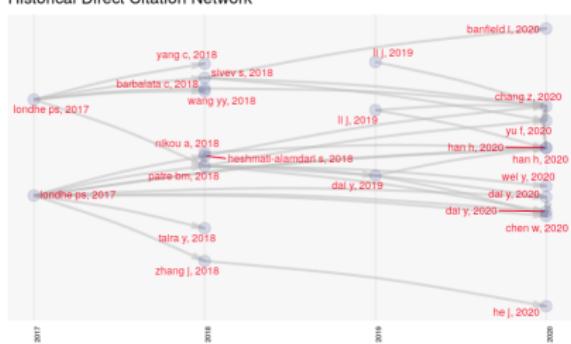
Annual Scientific Production



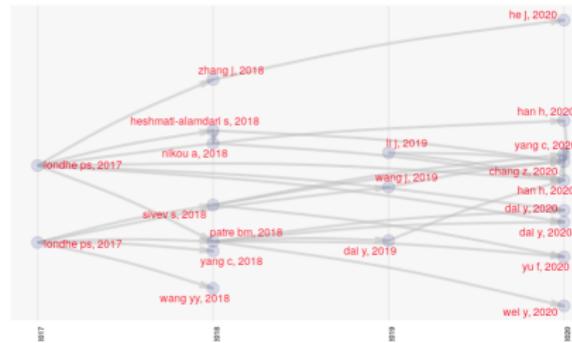
2º Ciclo - Bibliometrix

Analizar o Historiograph

1º Ciclo Historical Direct Citation Network



2º Ciclo Historical Direct Citation Network



2º Ciclo - Bibliometrix

Analisar o WorldCloud

1º Ciclo

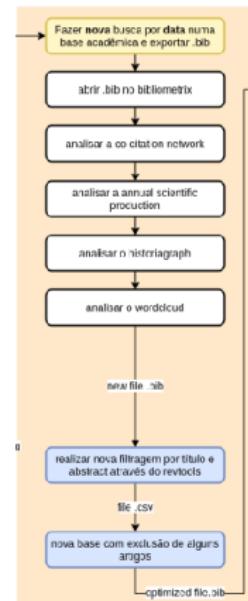


2º Ciclo



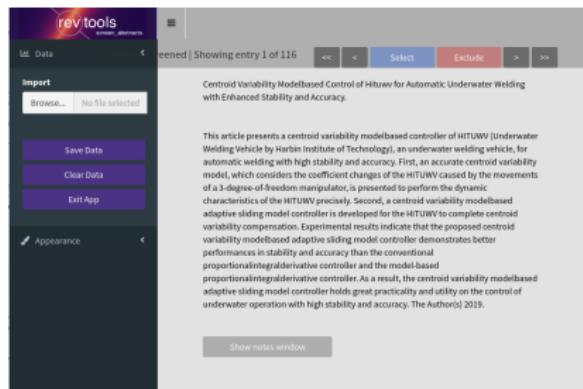
2º Ciclo

Ciclo Otimizado



2º Ciclo - RevTools

- ▶ É um pacote de R para apoiar pesquisadores que trabalham em projetos de síntese de evidências
- ▶ Visualizar padrões em dados bibliográficos
- ▶ Selecionar ou excluir interativamente artigos ou palavras individuais



2º Ciclo - RevTools

Realizar uma nova filtragem por título e resumo através do RevTools.

Nova base com exclusão de alguns artigos.

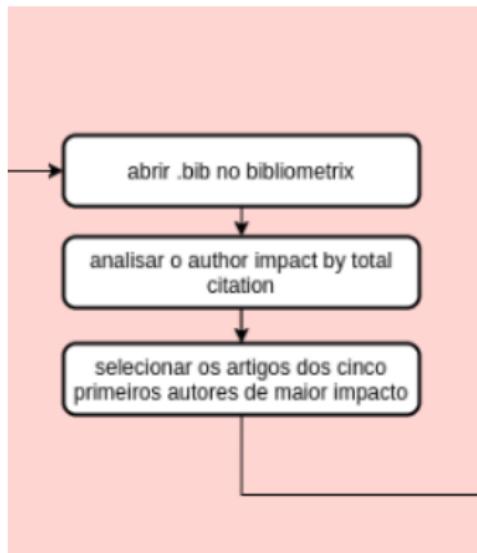
The screenshot shows an RStudio interface with an R script editor. The code is as follows:

```
library(revtools)
#Mudar a Pasta do arquivo
data <- read_bibliography("~/Documentos/AUM/revtools_aum/scopusfinal.bib")
View(data) # View opened data
result <- screen_abstracts(data)
assigned.dat <- read_bibliography("~/Documentos/AUM/revtools_aum/revtools_filtrados.csv")
View(assigned.dat)
# Salvar o resultado dos selecionados em .bib
screened.dat.YES = subset(assigned.dat, screened_abstracts == "selected")
write_bibliography(screened.dat.YES, "optimize_file.bib", format = "bib")
```

The status bar at the bottom left shows "14:74" and "(Top Level)". The status bar at the bottom right shows "R Script".

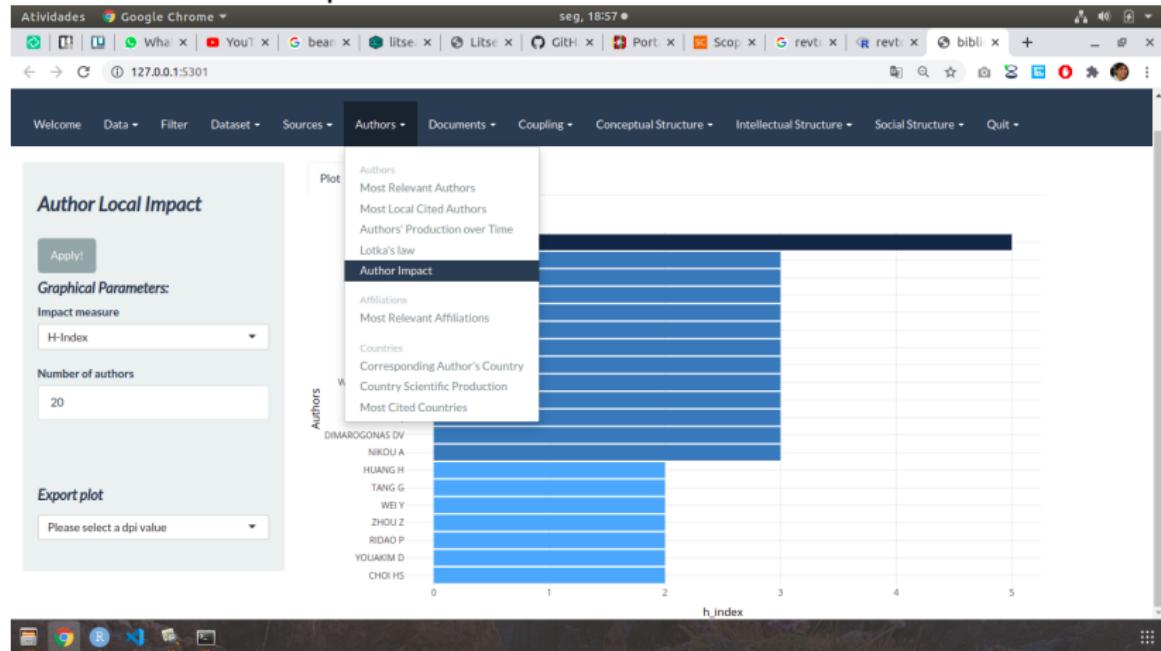
3º Ciclo

Ciclo Impacto



3º Ciclo

Analisar o Author Impact



3º Ciclo

Analisar o Author Impact by Total Citation

Plot Table

Show 20 rows Copy CSV Excel PDF Print Search:

Author	h_index	g_index	m_index	TC	NP	PY_start
WANG Y	5	9	0.833	99	9	2016
MOHANS	3	7	0.429	81	7	2015
LONDHE PS	3	5	0.429	80	5	2015
PATRE BM	3	5	0.429	80	5	2015
WAGHMARE LM	3	5	0.429	80	5	2015
DOUAT LR	1	1	0.167	60	1	2016
MANHES MMM	1	1	0.167	60	1	2016
RAUSCHENBACH T	1	1	0.167	60	1	2016
SCHERER SA	1	1	0.167	60	1	2016
VOSS M	1	1	0.167	60	1	2016
CHEN B	3	5	0.600	57	5	2017
WU H	3	5	0.600	57	5	2017
COLEMAN J	1	1	0.250	41	1	2018
DODY G	1	1	0.250	41	1	2018
OMERDI E	1	1	0.250	41	1	2018
SIVEV S	1	1	0.250	41	1	2018
TOAL D	1	1	0.250	41	1	2018
KIM J	1	3	0.143	40	3	2015
SANTHAKUMAR M	2	2	0.286	40	2	2015

3º Ciclo

Selecionar os artigos dos cinco primeiros autores de maior impacto

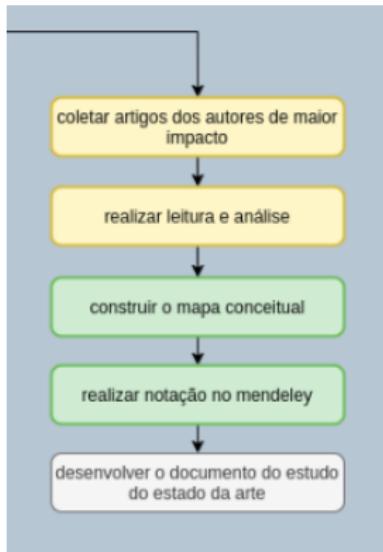
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DOI	AU	DE	ID	C1	CR	J1	AB	AR	coden
10.1016/j.locomotro.2018.03.082	PATRE BALODHIE PESWAGHMAIRE LMMOHAN	AUTONOMOUS UNDERWATER VEHICLE (AUV); FINITE-TIME CONTROL; FUZZY LOGIC; LYAPUNOV STABILITY; TERMINAL SLIDING MODE CONTROL	COMPUTER CIRCUITS; CONTROLLERS; DYNAMICS; MANIPULATORS; ROBUST CONTROL; SLIDING MODE CONTROL; TIME VARYING CONTROL SYSTEMS; UNCER	DEPARTMENT OF INSTRUMENTATION ENGINEERING, SHRI GURU GOBIND SINGH INSTITUTE OF ENGINEERING AND TECHNOLOGY, VISHNUPURI, NANDED, MAHARASHTRA, INDIA; D	ANTONELLI, G., ON THE USE OF ADAPTIVE/INTEGRAL ACTION FOR SIX DEGREES OF FREEDOM CONTROL OF AUTONOMOUS UNDERWATER VEHICLES (2007) IEE J. OCEAN. ENG.	OCEAN ENG.	IN THIS PAPER, A ROBUST FINITE TIME TRAJECTORY TRACKING CONTROL APPROACH IS PROPOSED FOR AUTONOMOUS UNDERWATER VEHICLE (AUV), WHICH BELONGS TO THE CLA	NA	NA
10.1109/OCEANSAP2016.7485382	MOHAN SSINGHY	DYNAMIC MODELLING; POSITION TRACKING CONTROL; REDUNDANCY RESOLUTION; TILTING; THRUSTER; UNDERWATER VEHICLE	DEGREES OF FREEDOM (MECHANICS); DYNAMIC MODELS; MANIPULATORS; MECHANICS; NON-LINEAR; POSITION CONTROL; REDUNDANCY; TRACKING (POSITION); VEHICL	MECHANICAL ENGINEERING, IT INDORE, INDORE, INDIA	ANTONELLI, G., (2014) UNDERWATER ROBOTS: MOTION AND FORCE CONTROL OF VEHICLE MANIPULATOR SYSTEMS, SPRINGER TRACTS IN ADVANCED ROBOTICS, BERLIN, JIN,	OCEANS - SHANGHAI	UNDERWATER VEHICLES ARE USUALLY DESIGNED WITH ADDITIONAL DEGREES OF FREEDOM THAN THOSE REQUIRED TO ACCOMPLISH GIVEN MANIPULATOR TASKS, A ROBOT PLATFOR	7485382	NA

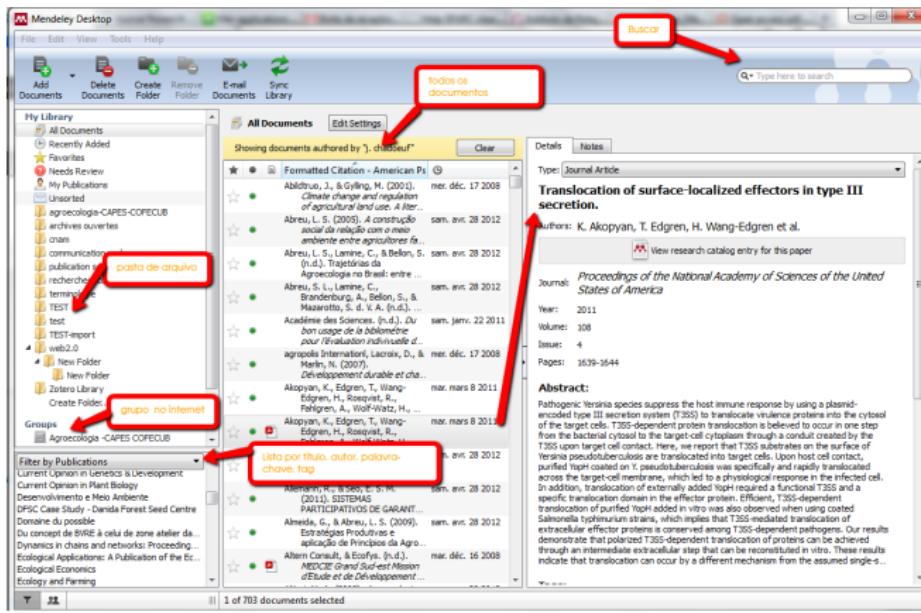
4º Ciclo

Ciclo de Produção



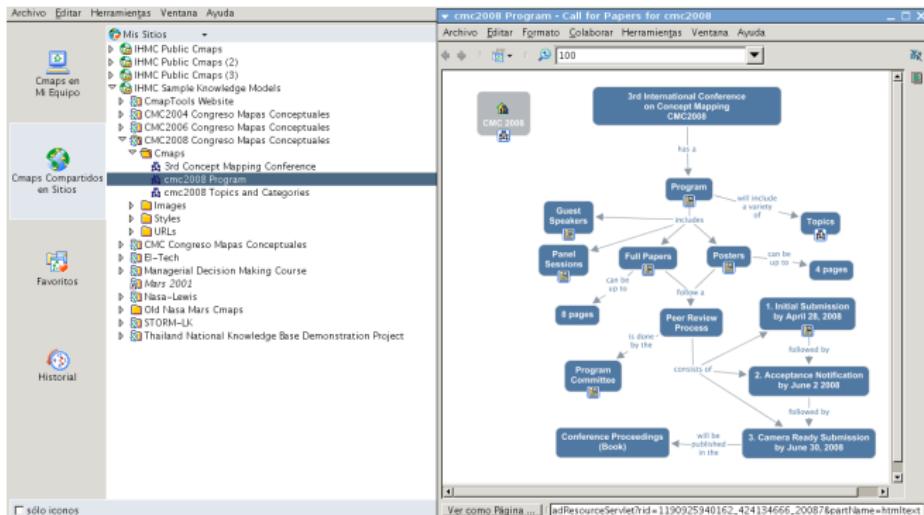
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CmapTools

Software de mapeamento de conceito



Vamos à prática...

"O que você sabe não tem valor algum, o valor está no que você faz com o que sabe." Bruce Lee



Dúvidas?

anderson.vale@fbter.org

marcoreis@fieb.org



<https://github.com/Brazilian-Institute-of-Robotics/bir-mini-method-bili>

