

semanticClimate's knowledge graphs

Peter Murray-Rust

University of Cambridge semanticClimate
Peter.murray.rust@googlemail.com

<https://semanticclimate.github.io/p/en/posts/resources/>

FOSDEM, Brussels BE, 2025-02-01

NIPGR team
Volunteers
TIB Germany

We'll guide you through
the presentation

And show some videos



AMI,
semantic
Climate



Chuff the OKF Okapi



Free and
Open Source
(F/OSS)

WE'RE DEADLY SERIOUS!



What are we going to see?

Overview of semanticClimate ...
Intern presentations ...
Live/online Demos

This is NOT a “student project”. We’re semantifying “**the survival guide for humanity***”

Because nobody else yet is doing it



<https://www.bbc.com/news/science-environment-65000182> *

Not available in any Indian languages

Mentors and Support



Dr. Gitanjali Yadav



Dr. Renu Kumari



Ms. Shweata N Hegde

“Doctor WHO
handover”



Dr. Ambreen Hamdani



Simon Worthington: TIB Hanover (German National Library of Science and Technology:
Leibniz Information Centre for Science and Technology and University Library)

2020-current; and 100+ participants
6-monthly internships (thanks NIPGR)

<https://blogs.ch.cam.ac.uk/pmr/2009/06/06/the-doctor-who-model-of-open-source/>

They joined in January 2025

IPCC Chapters analysis



AMI



Moobashara Jawed

AR6/WG1/Chapter 2: Changing State of the Climate System



Anudev S

AR6/WG2/Chapter 6: Cities, settlements and key infrastructure



Mebin Joseph

AR6/WG2/Chapter 5: Food, Fibre and Other Ecosystem Product



Shabnam Barbhuiya

AR6/WG1/Chapter 10: Linking Global to Regional Climate Change



Sharon Nayak

AR6/WG2/Cross-Chapter Paper 7: Tropical Forests



Madhana Kumar

AR6/WG2/Chapter 4 : Water

Sharon will be presenting!



"Learning-by-Doing"

- Driven by public presentations!
- new joiners often have no previous coding

Presentations from OKF

“TheTechWeWant 2024”

Shweata and Parijat describe IPCC; how to make it semantic

Enshittification alert! There may be YouTube ads



- https://www.youtube.com/watch?v=o50Jd1w6xKw&t=16842s&ab_channel=OpenKnowledgeFoundation (Shweata N Hegde)
- https://www.youtube.com/watch?v=V7Sxo0IXe8g&t=7800s&ab_channel=OpenKnowledgeFoundation (Parijat Bhadra)

Software freedoms

0. **to run the program** for any purpose
1. to study how the program works (**source code**)
2. **to redistribute copies** so you can help your neighbor.
3. To distribute copies of your **modified versions**

https://en.wikipedia.org/wiki/The_Free_Software_Definition



<https://blogs.ch.cam.ac.uk/pmr/2014/07/01/visit-of-richard-stallman-rms-to-cambridge/>

Our mission

- **To create verifiable computable climate knowledge**
- **we take the following as verifiable sources of truth**
 - **IPCC framework (PDF or web-HTML)**
 - **UNFCCC reports (COPs)**
 - **1000/week scholarly climate publications**



What's in the IPCC
material?

It's HUGE!



IPCC website (PDF or web-HTML)

- 3 Working Groups (WG1, WG2, WG3)
- several Special Reports
- Synthesis Report
- 15000+ bibliography
- 700-term Glossary
- 1500 acronyms
- maps, data, etc.

We make all of these semantic (machine parsable into structured, annotated data). Total:

- 20,000 pages of PDF => HTML
- 1000 figure captions

Knowledge Graphs



our approach is very
simple

no OWL,
no
Protege

RDF triple
node-edge-node

Wikidata!
It's an
enhanced triple
Store

Graph Visualization and Analysis

We've many tools...

editors and display

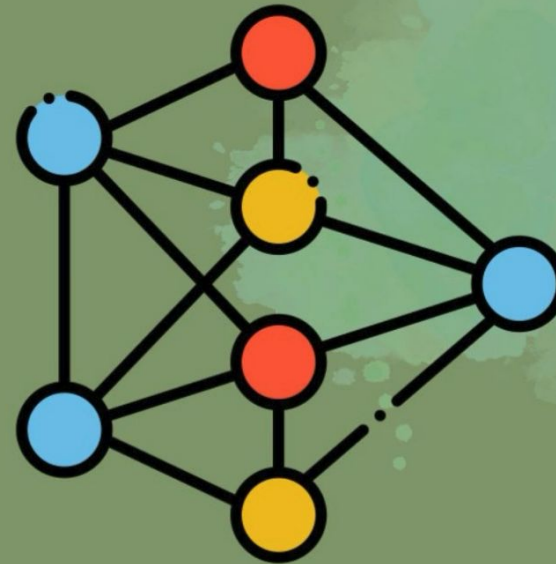
- **networkX**
- D3

query languages...

- **SPARQL**
- GraphQL

Sharon demonstrates network and a ToC graph

Networks of
IPCC
Working
Groups



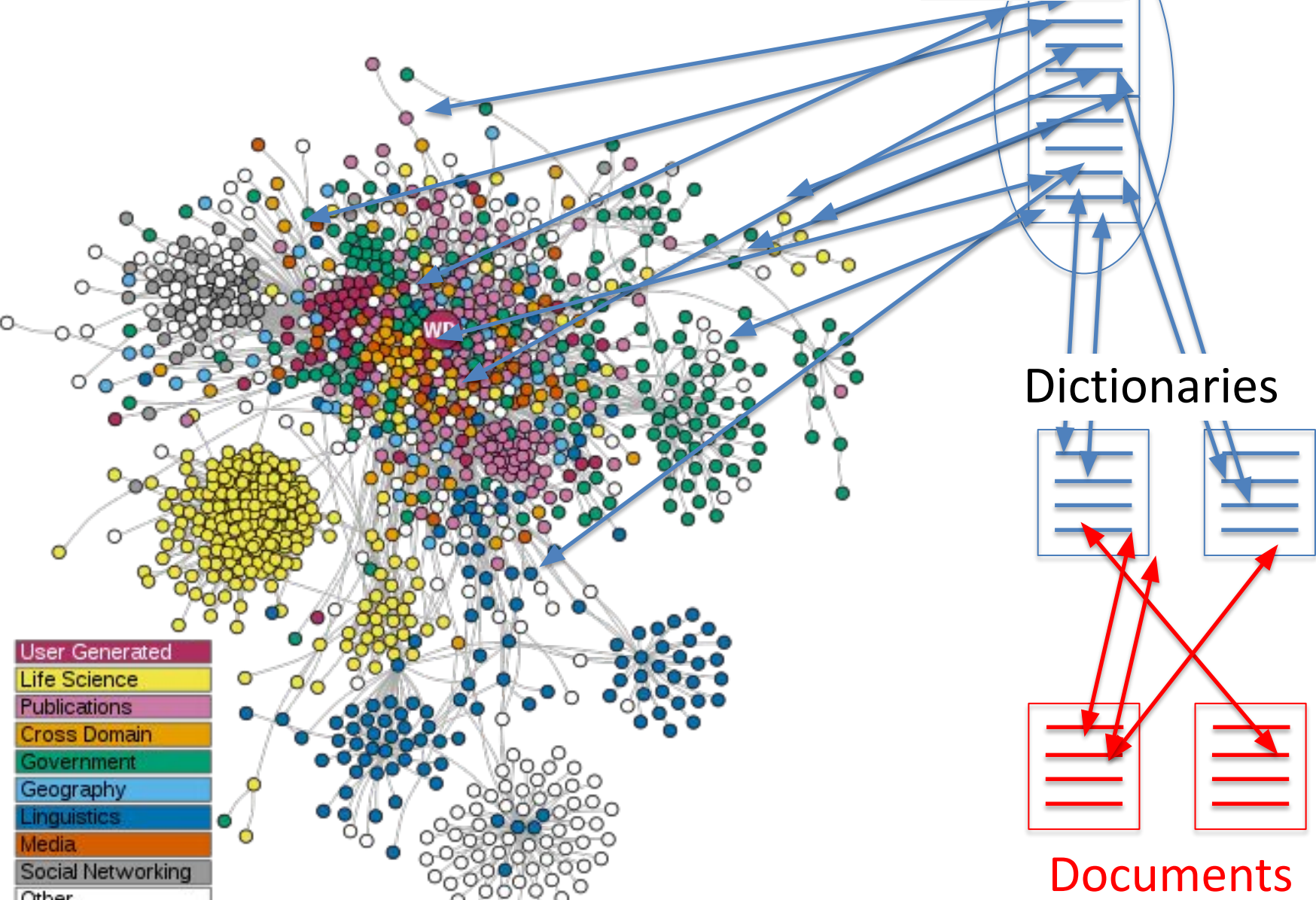
By Team
semanticClimate

~ Sharon

Linked OpenData



100 million items



- User Generated
- Life Science
- Publications
- Cross Domain
- Government
- Geography
- Linguistics
- Media
- Social Networking
- Other

Dictionaries

Documents

Renu's go-to page of sC Resources

<https://semanticclimate.github.io/p/en/posts/resources/>

- [Glossary/Encyclopedia \(700-2000 IPCC terms\)](#)
(SimonWorthington)
- [Knowledge Graph of the IPCC glossary](#)
(ShweataHegde)
- [Wikidata Knowledge Graph of a section of SYR \(IPCC Synthesis\)](#) (Egon Willighagen)

OUTREACH

Past events

- [Shweata](#) and [Parijat Bhadra](#) at “The Tech we want” 2024
- [ISOSC CODATA 2023](#) many short videos
- [Renu’s page of videos](#)

Upcoming event

OKFN ORDEM (Shweata and Ambreen) Feb 15 2025

we'd love to

- Scale up knowledge graphs
- Find new users
- make our terminology available
- find new volunteers (climate, IT, languages)
- Build tested libraries

- Have a look at our resources!

Thanks to:

- * Yusuf Hamied Travel Fellowship (Cambridge India)
- NIPGR Hosting and internships
- Indian National Young Academy of Scientists
- Egon Willighagen
- Wikimedia
- The brave people who have challenged injustice

End of Presentation

(some random pages about AI follow)

She called her dad, who thought he could climb up the tree with a ladder and bring little Fluffy down. **The others sat next to her and fondled her.**

Hallucinations!

And then he got to the, they pulled his into the house on the window, **and he slapped out his infl Sexuality,**

everybody in the truck, the whole family, just waving and yelling. My goodness. **That was pretty, extremely barbaric.**

And then sometimes I was scared about the traffic on the, you know, the cars, some, **some men are homeless, or they're autreally ill.**



Polly,
stochasticParrot

Should we trust HuggingFace?



AMI, semanticClimate



I don't know where their data comes from
And they don't have an advisory board

We must create our own OKF-Open framework!

the data are private,
run by a private for-profit company



Hugging Face

Company type	Private
Industry	Artificial intelligence, machine learning, software development
Founded	2016; 9 years ago
Headquarters	Manhattan, New York City
Area served	Worldwide
Key people	Clément Delangue (CEO) Julien Chaumond (CTO) Thomas Wolf (CSO)
Products	Models, datasets, spaces
Revenue	▲ US\$15 million (2022)
Number of employees	170 (2023)
Website	huggingface.co

“We are on a mission to democratize *good* machine learning, one commit at a time.”

ROBBER BARONS



1904 depiction of an acquisitive and manipulative Standard Oil (founded by John D. Rockefeller) as an all-powerful octopus

Those practices included

- unfettered consumption and destruction of natural resources,
 - influencing high levels of government,
 - wage slavery,
 - squashing competition by acquiring their competitors to create monopolies and/or trusts that control the market, and
- * schemes to sell stock at inflated prices to unsuspecting investors.^[2]

Tiktok's enshittification

The company manually allocates surplus to creators, and they can take it away again, too.



Cory Doctorow  · [Follow](#)

17 min read · Jan 21, 2023

Here is how platforms die: first, they are good to their users; then they abuse their users to make things better for their business customers; finally, they abuse those business customers to claw back all the value for themselves. Then, they die. I call this enshittification, and it is a seemingly inevitable consequence arising from the combination of the ease of changing how a platform allocates value, combined with the nature of a "two-sided market", where a platform sits between buyers and sellers, hold each hostage to the other, raking off an ever-larger share of the value that passes between them.

[https://pluralistic.net/2023/01/21/potemkin-ai/
/#hey-guys](https://pluralistic.net/2023/01/21/potemkin-ai/#hey-guys)

Engage your brain!
Control AI or it will
control you!



AMI, semanticClimate

- https://x.com/okfn_okapi