



TIGR²ESS

Transforming India's Green Revolution
by Research and Empowerment for
Sustainable food Supplies



UNIVERSITY OF
CAMBRIDGE



Global challenges and Internships

Peter Murray-Rust

Department of Chemistry, Cambridge

Shweata N. Hegde

Project Manager (TIGR2ESS)

TIGR2ESS Workshop 2019, New Delhi

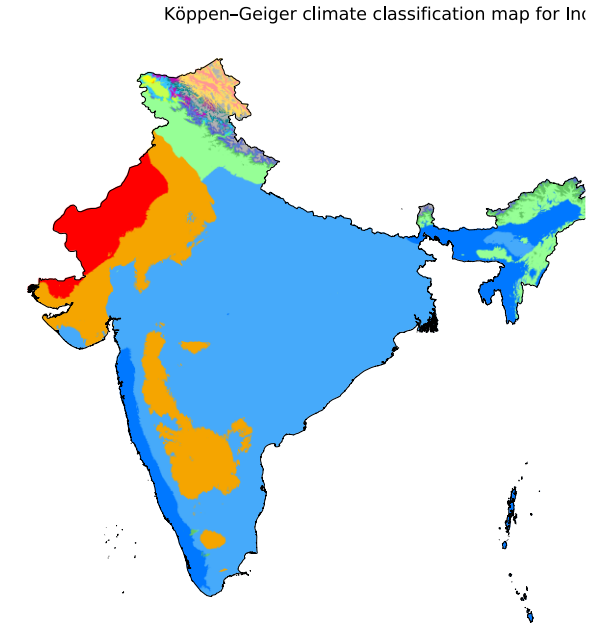
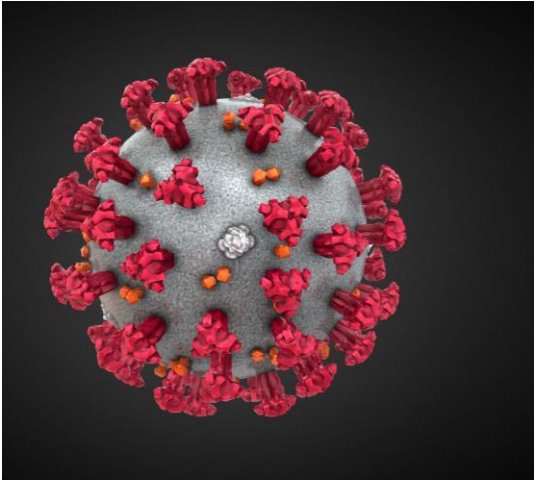


Intern-based 2 months online prep.
1-day knowledge-mining workshop

2020
openVirus

2021
Invasive species

2022
IPCC reports



Source: Beck et al.: Present and future Köppen-Geiger climate classification maps at 1-km resolution, Scientific Data, 2018, 7:122, DOI:10.1038/s41598-018-28102-2

By Beck, H.E., Zimmermann, N. E., McVicar, T. R., Vergopolan, N., Berg, A., & Wood, E. F. - "Present and future Köppen-Geiger climate classification maps at 1-km resolution". Nature Scientific Data. DOI:10.1038/sdata.2018.214., CC BY 4.0, <https://commons.wikimedia.org/w/index.php?curid=74673686>



Dictionaries

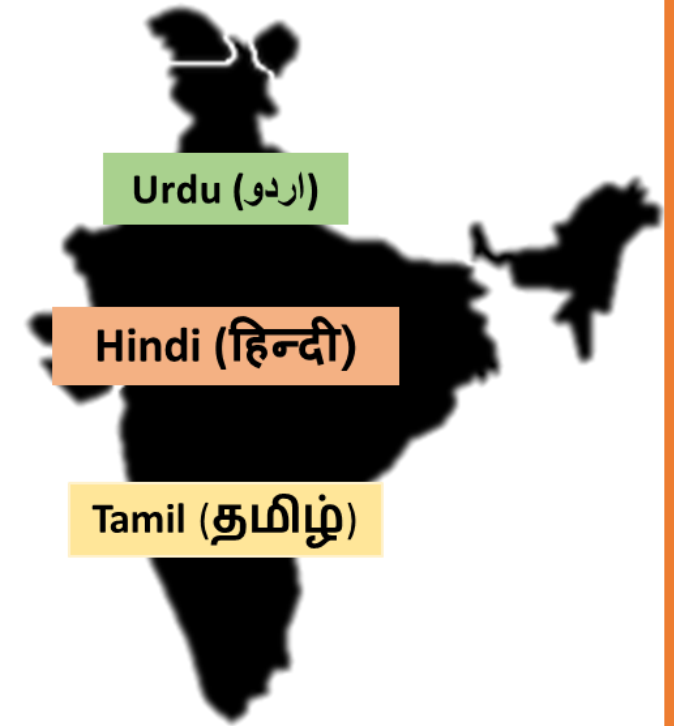
MULTILINGUAL



Machine-understandable

```
<synonym xml:lang="zh">松球</synonym>  
<synonym xml:lang="de">Koniferenzapfen</synonym>  
<synonym xml:lang="hi">कोणधारी कोण</synonym>  
<synonym xml:lang="es">cono</synonym>  
<synonym xml:lang="fr">cône</synonym>
```

Plants dictionary



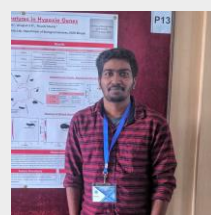
Usable in AI

2020

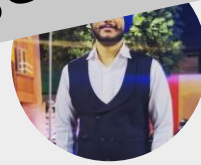
openVirus



NIPGR Interns



INyas KARYA
Interns



CamBio
Hackathon 2020



3 year rolling online internship program
to tackle global challenges

Shweata is TIGR2ESS funded
(2021)



CORN



Prachi Singh

Botany Undergrad, Janki
Devi Bajaj Girls Govt.
College, Kota



TOMATO



CAMELLIA



Anam Anjum

Masters (Botany) Student,
Janki Devi Bajaj
Government Girls Science
College Kota



MINT



LEMON



Anjali Shekhawat

Masters (Botany) Student,
Jai Narain Vyas University,
Jodhpur, Rajasthan, India.



GRAPES

Kumari Rageshwari

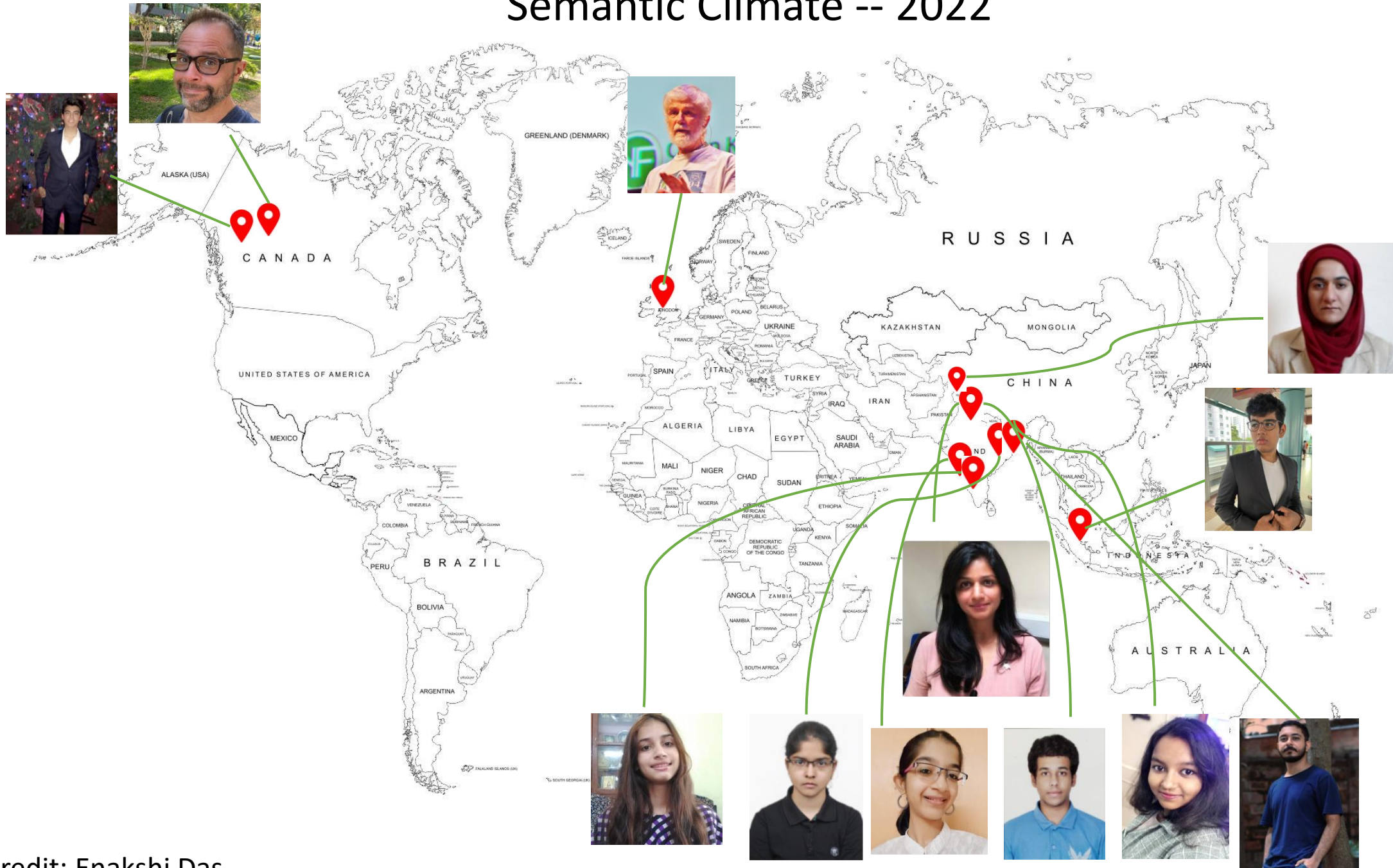
Masters (Biotech) Student,
Botany Department in
University of Rajasthan



जैव प्रौद्योगिकी विभाग
Department of Biotechnology
Ministry of Science & Technology
Government of India

DBT-KARYA Interns 2021

Semantic Climate -- 2022



Use tech!



Python

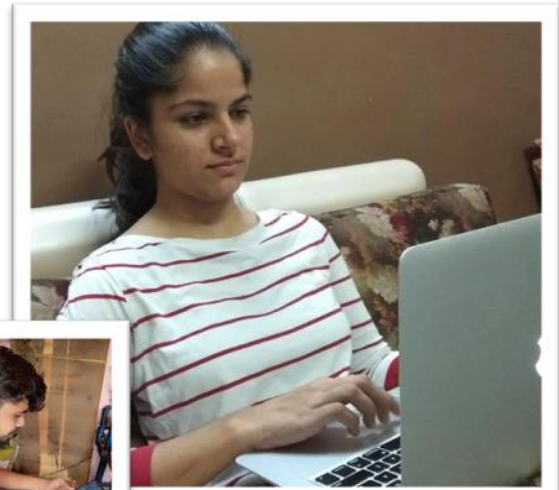
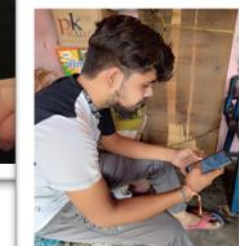
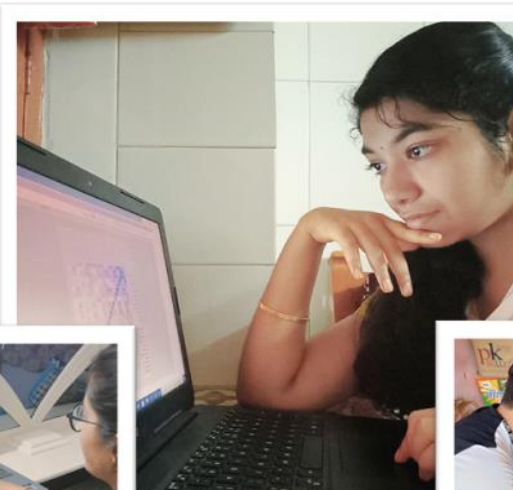
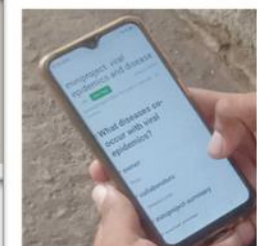


CONTAINERISATION!

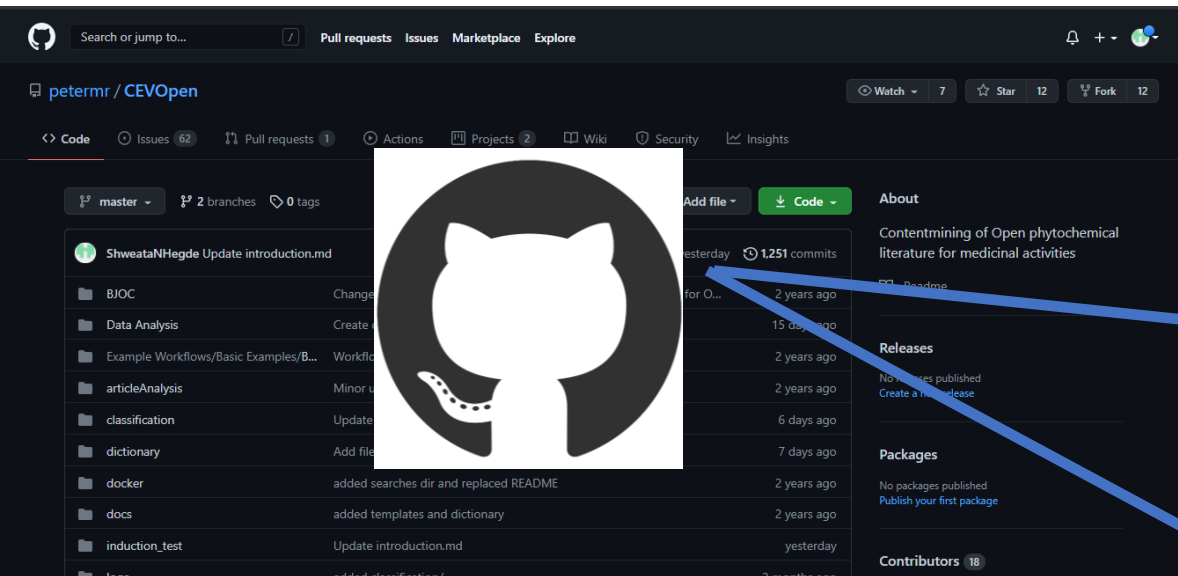
Power

Raspberry Pi

Disk



Collaborate...



GitHub

Open Notebook Philosophy*
Everything on the web!

Updated 19-hours ago
real-time updates!

Try it!

<https://github.com/petermr/CEVOpen>

<https://github.com/petermr/pygetpapers>

<https://github.com/petermr/pyami>

*https://en.wikipedia.org/wiki/Open-notebook_science

Work as community



Not-started

In-progress

Completed

People



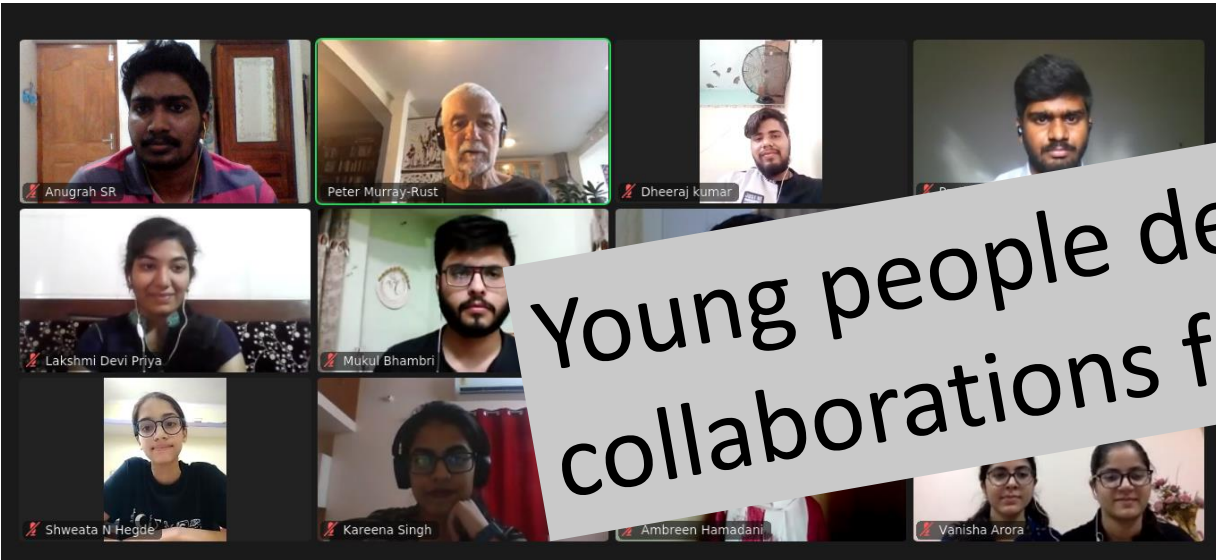
Tasks

ISSUES	Ambreen	Vaishali	Priya	Rajan	Vanisha	Sana	Kareena	Charles		
corpus (between 200-950)	Ready	Ready	Ready	Ready	Ready	Ready	Ready	Ready		
dictionary	Ready	Ready	Ready	Ready	Ready	Ready	Ready	In progress		
annotated (Pos/Neg) viral epidemics	8.90%	40/10	<div>What I Did? What I Plan to Do? Blocks?</div>					121/29	5/35	
Tasks	Ready	Ready							Ready	Haven't Started
notebooks	Ready	In progress							started	In progress
machine learning / NLP	In progress	In progress	Haven't Started	In progress	In progress	In progress	In progress	In progress		
display	In progress	Haven't Started	Haven't Started	Haven't Started	Haven't Started	Haven't Started	In progress	In progress		
language variants	Ready	Haven't Started	Ready	Ready	Haven't Started	In progress	Haven't Started	Haven't Started		
ami search	Ready	In progress	Ready	Ready	Ready	Ready	Ready	Haven't Started		

What I Did?
What I Plan to Do?
Blocks?

Daily Catch-up

Future



Cambiohack, 2020

Young people developing tech and collaborations for global challenges



Piaget Hackathon, SDG, 2022