ANÁLISIS GEOESPACIAL

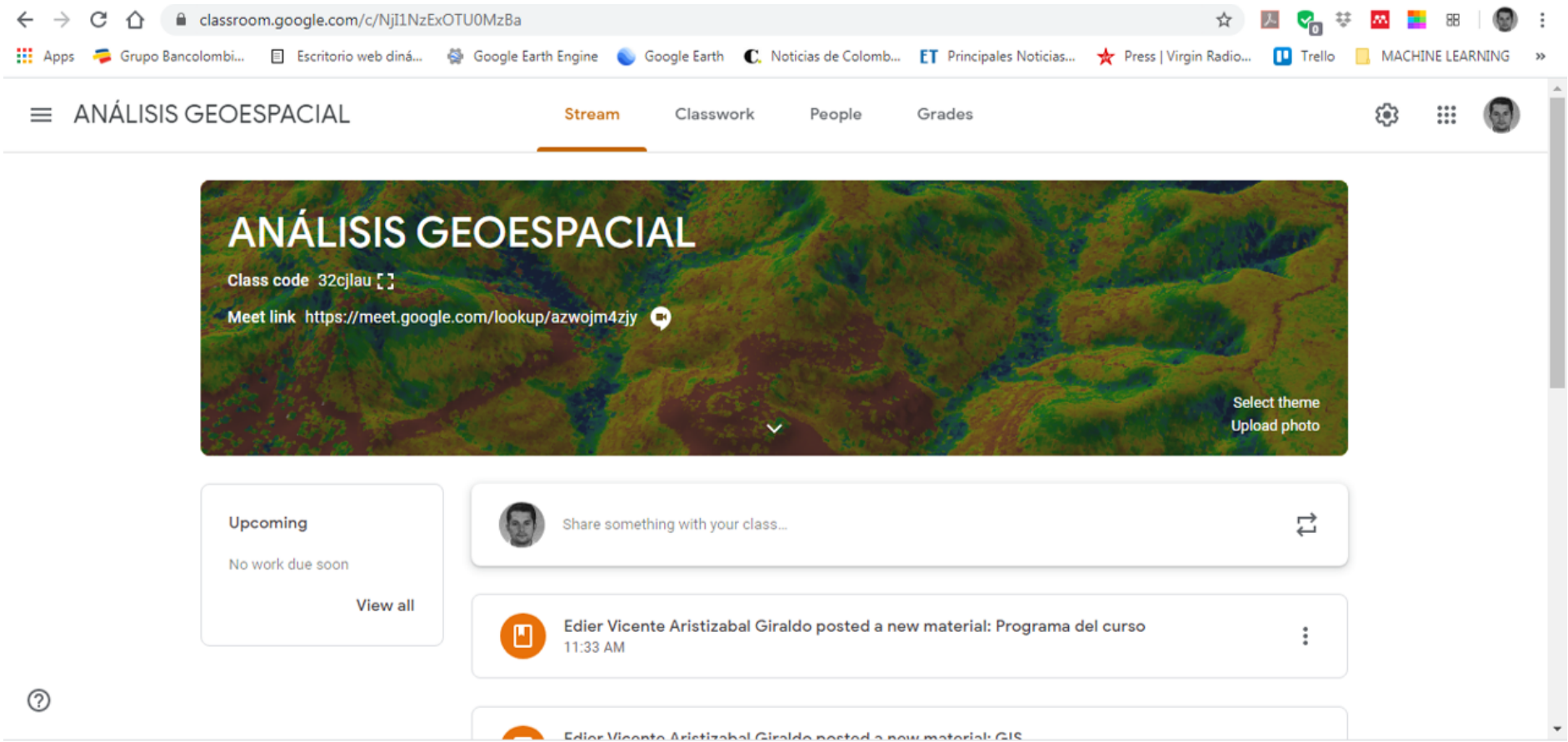
Edier V. Aristizábal G.

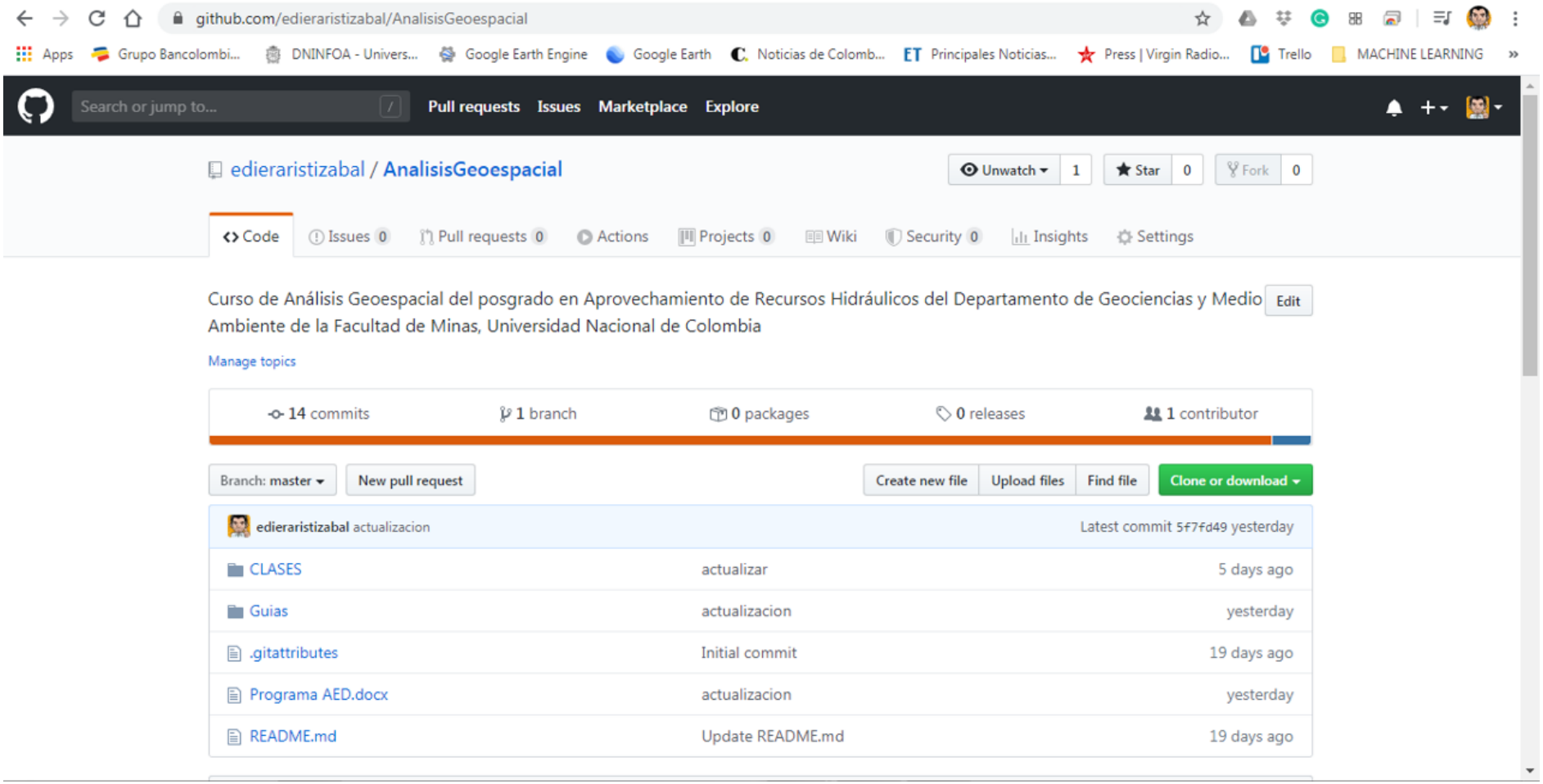
evaristizabalg@unal.edu.co

(Versión:February 28, 2021)

UNIVERSIDAD NACIONAL DE COLOMBIA
SEDE MEDELLÍN

GEOHAZARDS
Semillero de Investigación


classroom.google.com/c/NjI1NzExOTU0MzBa
Apps
Grupo Bancolombi...
Escritorio web diná...
Google Earth Engine
Google Earth
Noticias de Colomb...
Principales Noticias...
Press | Virgin Radio...
Trello
MACHINE LEARNING
ANÁLISIS GEOESPACIAL
Stream
Classwork
People
Grades
ANÁLISIS GEOESPACIAL
Class code 32cjlau
Meet link https://meet.google.com/lookup/azwojm4zjy
Select theme
Upload photo
Upcoming
No work due soon
View all
Share something with your class...
Edier Vicente Aristizabal Giraldo posted a new material: Programa del curso
11:33 AM


github.com/edieraristizabal/AnalisisGeoespacial
Search or jump to...
Pull requests
Issues
Marketplace
Explore
edieraristizabal / AnalisisGeoespacial
Unwatch 1
Star 0
Fork 0
Code
Issues 0
Pull requests 0
Actions
Projects 0
Wiki
Security 0
Insights
Settings
Curso de Análisis Geoespacial del posgrado en Aprovechamiento de Recursos Hidráulicos del Departamento de Geociencias y Medio Ambiente de la Facultad de Minas, Universidad Nacional de Colombia
Edit
Manage topics
14 commits
1 branch
0 packages
0 releases
1 contributor
Branch: master
New pull request
Create new file
Upload files
Find file
Clone or download
edieraristizabal actualizacion
Latest commit 5f7fd49 yesterday
CLASES actualizar 5 days ago
Guias actualizacion yesterday
.gitattributes Initial commit 19 days ago
Programa AED.docx actualizacion yesterday
README.md Update README.md 19 days ago

Objetivos del curso

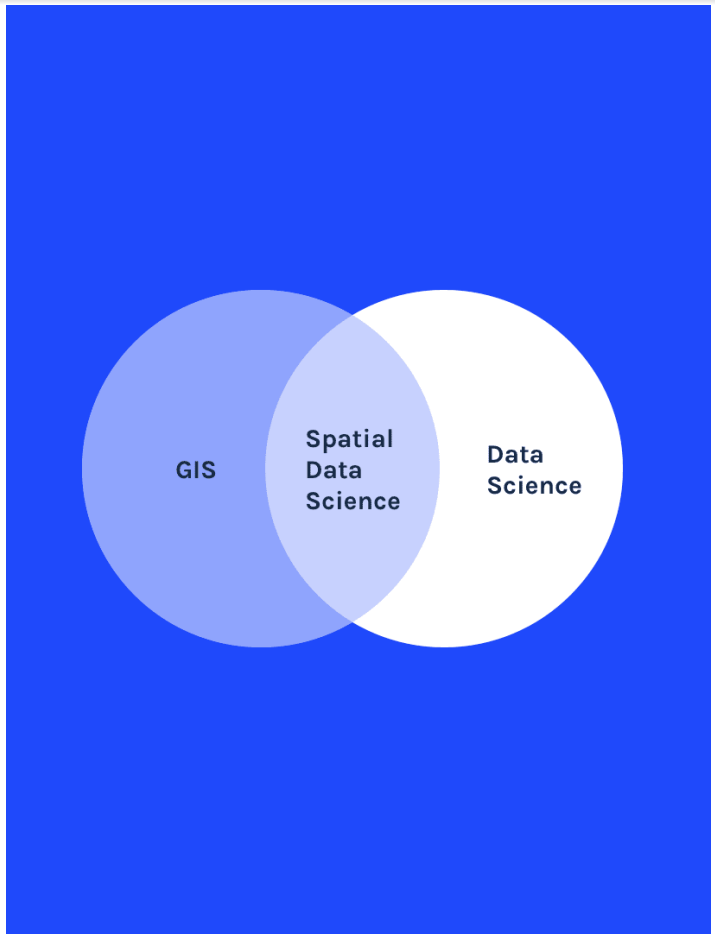
Objetivos y alcances del curso

El curso Análisis Geoespacial está orientado para estudiantes de posgrados que deseen formarse como GDS (Geospatial Data Science) adquiriendo conocimientos sobre sensores remotos y datos geoespaciales en un contexto ambiental, utilizando herramientas tipo Sistemas de Información Geográfica (SIG), Google Earth Engine (GEE), QGIS, Big Data, y programación en lenguaje Python.

El curso es teórico - práctico. Se dictarán clases teóricas con las técnicas y modelos a utilizar, y clases prácticas donde se resolverán dudas con el manejo de las herramientas. El curso se evaluará a través de un trabajo individual durante todo el curso, donde el estudiante implementará en una cuenca de su elección las herramientas de análisis presentadas en el curso.

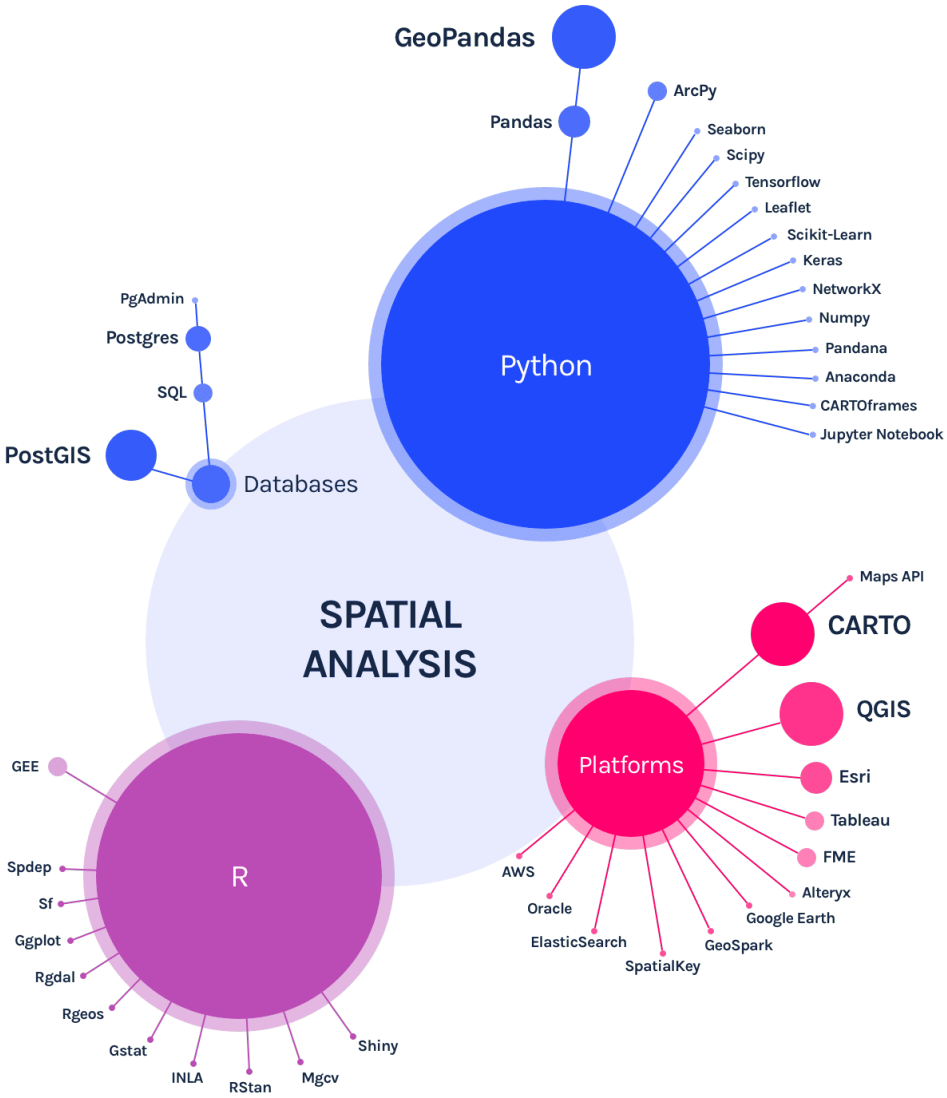
Geospatial Data Science

Geospatial data science (GDS) is a subset of Data Science that focuses on the unique characteristics of spatial data, moving beyond simply looking at **where things happen to understand why they happen there**.

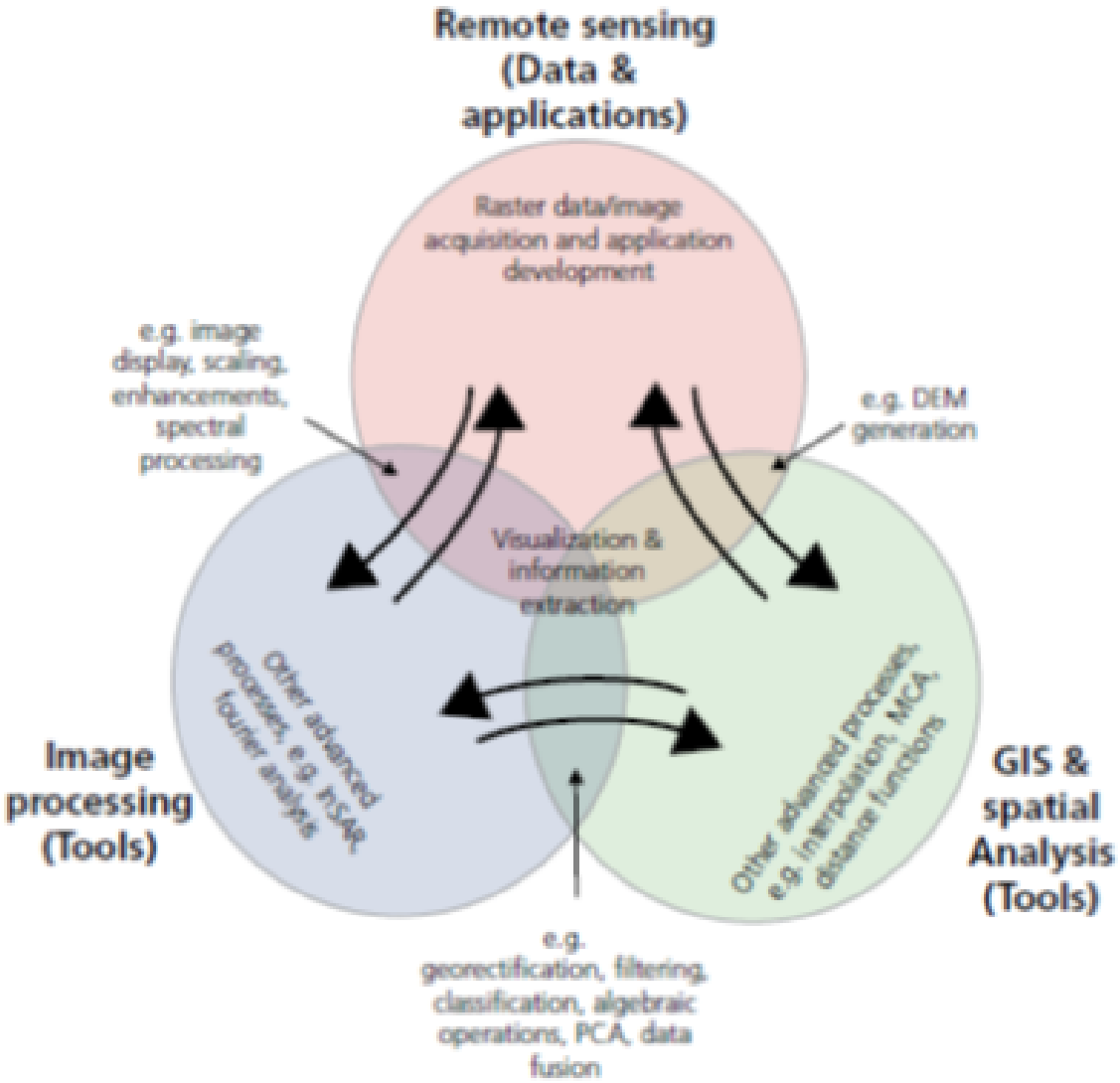


https://carto.com/what-is-spatial-data-science/

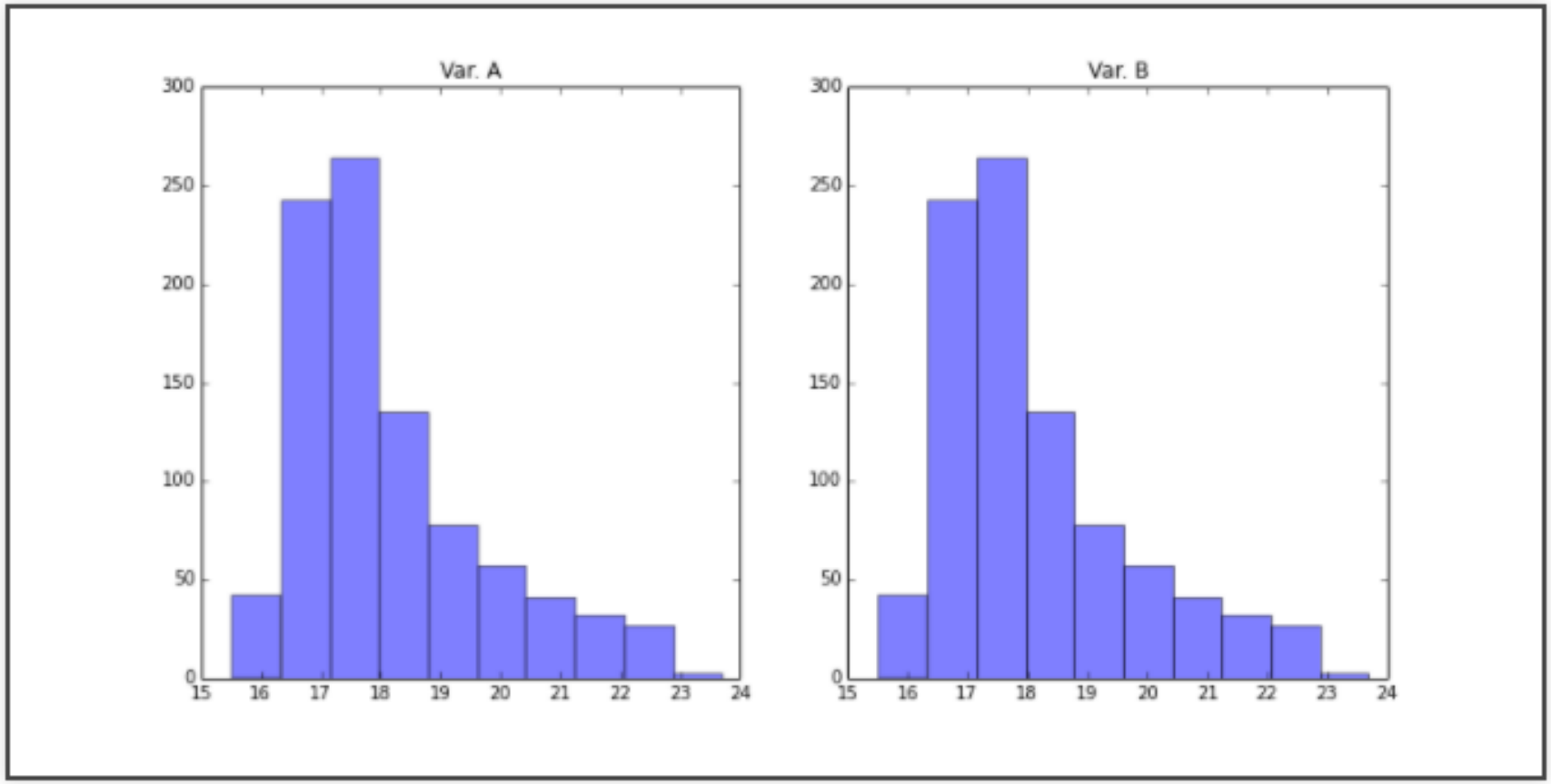
Geospatial Data Science



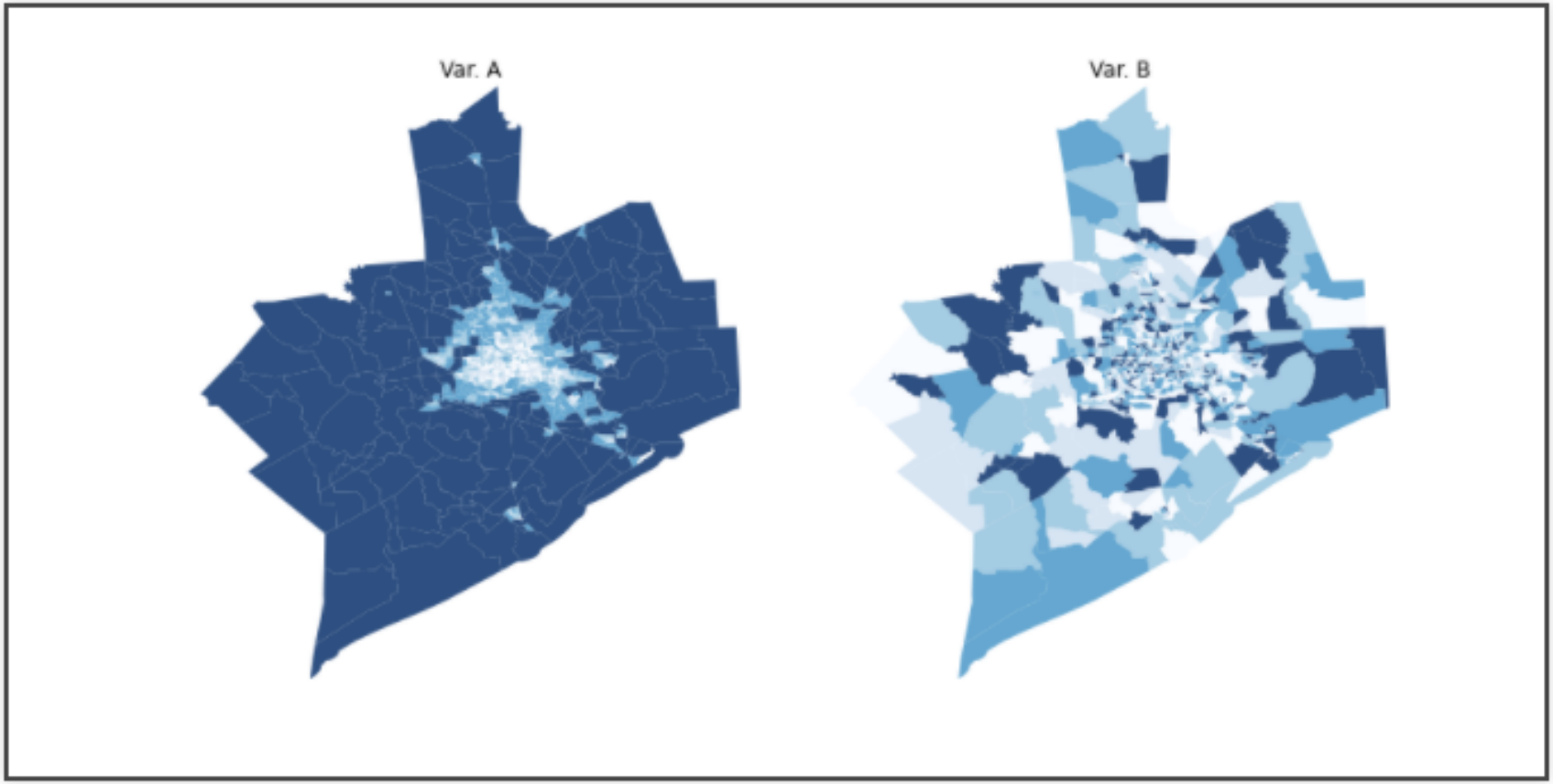
https://carto.com/what-is-spatial-data-science/


Remote sensing (Data & applications)
Raster data/image acquisition and application development
e.g. image display, scaling, enhancements, spectral processing
e.g. DEM generation
Visualization & information extraction
Image processing (Tools)
Other advanced processes, e.g. PCA, fourier analysis
Other advanced processes, e.g. interpolation, MCA, distance functions
GIS & spatial Analysis (Tools)
e.g. georectification, filtering, classification, algebraic operations, PCA, data fusion

Why spatial is special?

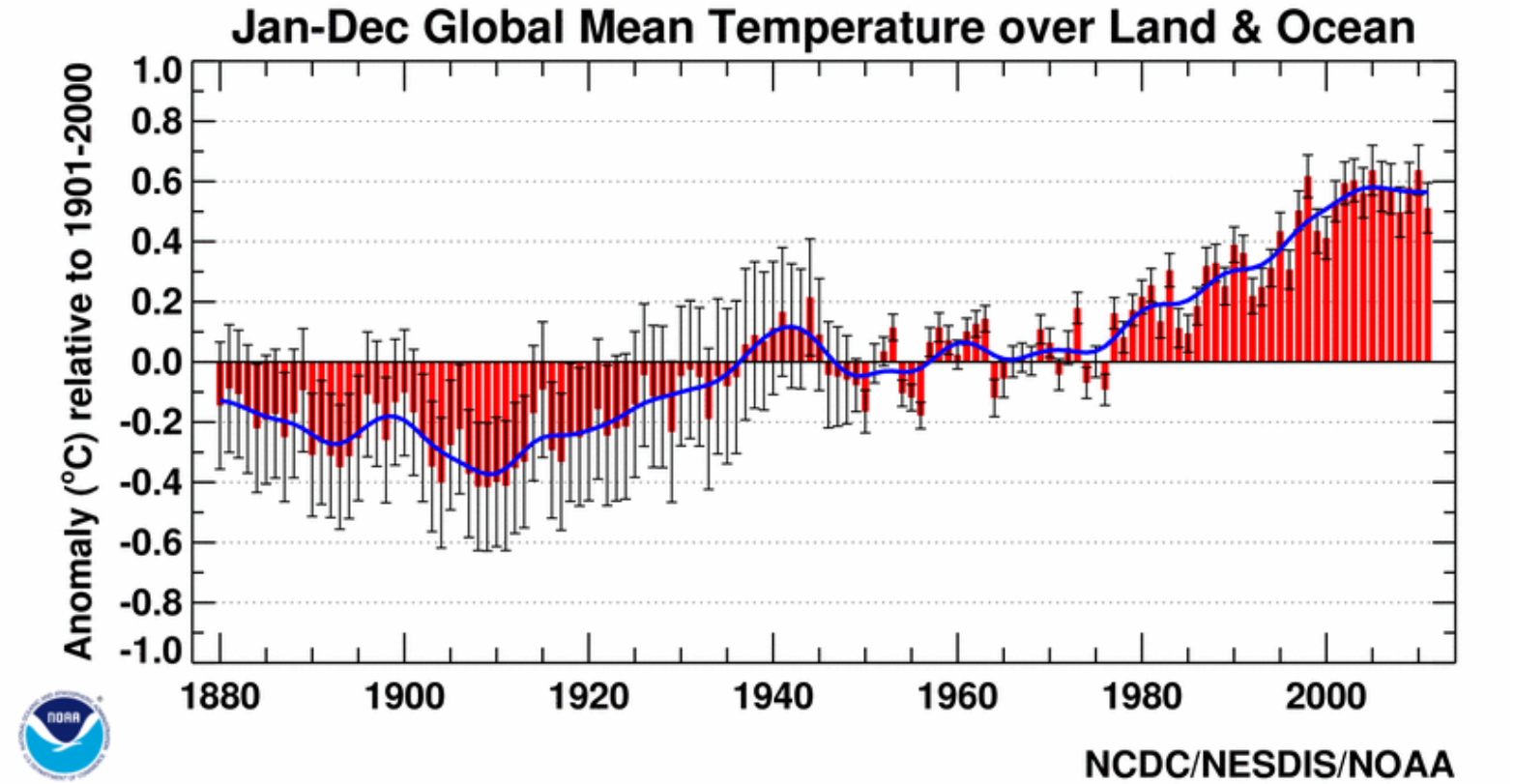


Why spatial is special?

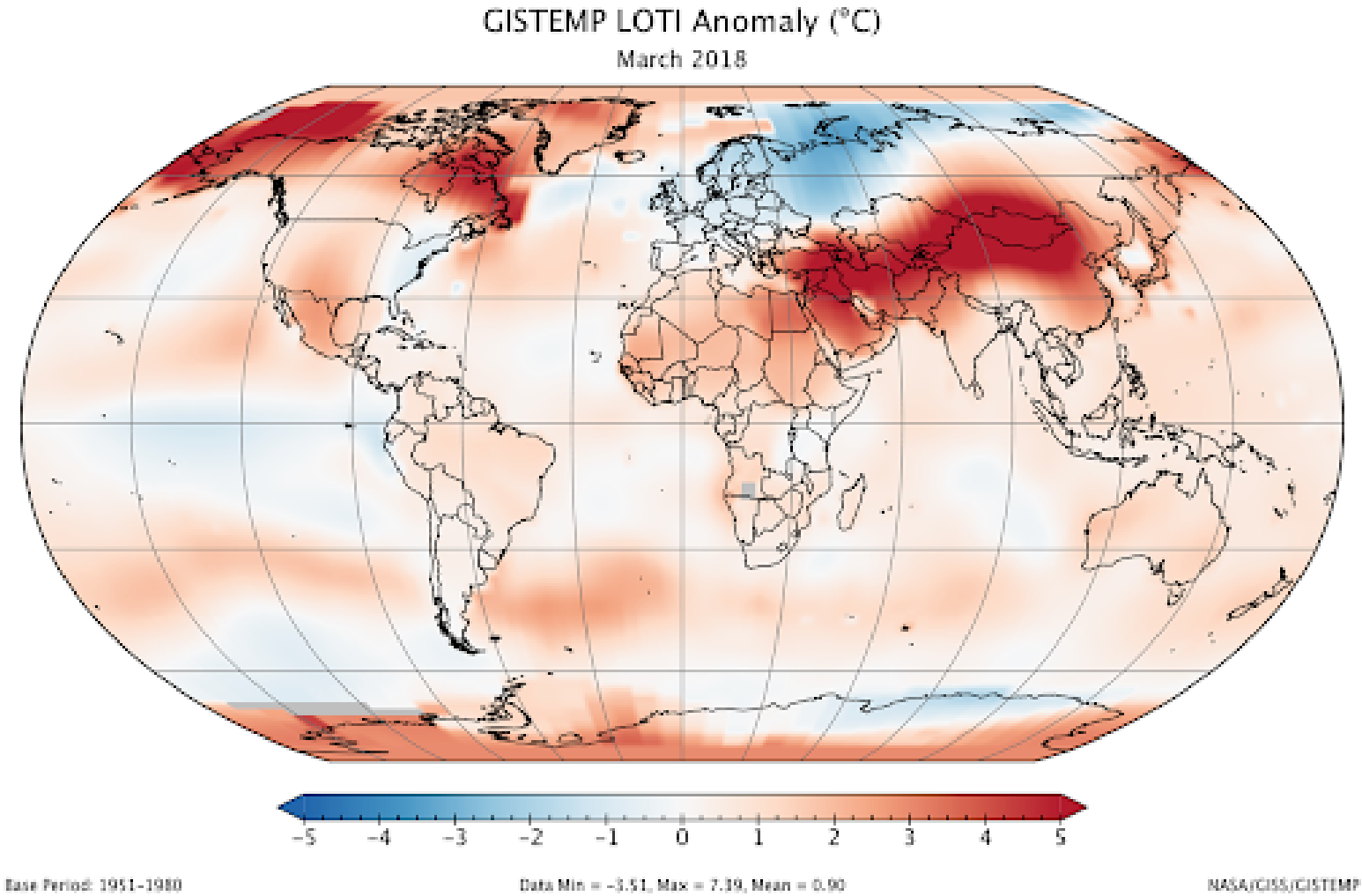


-9999	-9999	-84	-42	-27	-10	6	-5	8	55	163	330	525	731	957	1191	1429	1669	1883	2044
-9999	-123	-82	-39	-25	-12	-13	-12	-5	47	156	323	518	726	952	1188	1430	1673	1885	2039
-9999	-131	-83	-38	-25	-16	-23	-20	-12	41	148	310	500	707	936	1179	1429	1677	1886	2033
-9999	-132	-85	-39	-25	-18	-34	-30	-19	34	146	299	483	685	914	1167	1430	1682	1887	2025
-9999	-137	-92	-43	-25	-19	-42	-38	-31	24	141	291	473	674	902	1162	1438	1695	1894	2018
-9999	-148	-102	-47	-25	-19	-50	-51	-42	12	123	275	470	681	915	1183	1468	1726	1914	2021
-9999	-163	-112	-51	-26	-20	-58	-58	-45	0	98	262	469	696	949	1238	1536	1787	1953	2035
-9999	-175	-117	-51	-26	-19	-62	-59	-45	0	86	253	468	710	994	1322	1638	1872	2001	2044
-9999	-168	-113	-50	-25	-12	-57	-55	-35	0	83	245	461	717	1035	1406	1743	1955	2034	2025
-9999	-9999	-98	-49	-26	-1	-52	-52	-35	-8	73	230	446	713	1064	1472	1827	2023	2061	2012
-9999	-9999	-95	-51	-30	1	-49	-53	-47	-26	51	206	427	710	1083	1509	1873	2070	2102	2060
-9999	-160	-111	-58	-36	8	-45	-52	-53	-41	32	187	413	709	1090	1512	1871	2083	2149	2141
-9999	-180	-131	-68	-45	15	-27	-41	-47	-36	34	188	410	706	1078	1481	1825	2055	2172	2210
-9999	-180	-147	-79	-48	14	-15	-25	-30	-11	58	204	421	710	1066	1450	1778	2015	2172	2256
-9999	-9999	-153	-87	-50	5	-18	-11	-12	15	91	231	445	726	1063	1431	1754	1989	2160	2279
-9999	-9999	-159	-92	-51	4	-22	-7	-4	33	116	257	470	740	1055	1409	1733	1969	2137	2279
-9999	-9999	-168	-96	-49	10	-21	-7	0	44	133	272	478	733	1031	1380	1713	1952	2115	2259
-9999	-9999	-176	-97	-43	18	-17	-6	4	54	142	272	461	701	991	1348	1698	1944	2101	2240
-9999	-9999	-180	-93	-35	25	-12	-4	9	60	142	258	432	657	947	1315	1680	1931	2088	2226
-9999	-9999	-180	-90	-30	29	-7	-6	6	57	134	246	412	628	914	1285	1651	1905	2063	2206
-9999	-9999	-180	-96	-33	26	-2	-10	-6	42	124	242	407	613	888	1256	1623	1874	2031	2176
-9999	-9999	-180	-101	-39	22	-1	-11	-18	26	120	248	410	599	862	1237	1613	1860	2007	2149
-9999	-9999	-9999	-96	-45	22	4	-5	-18	23	125	256	410	578	831	1217	1609	1855	1998	2139
-9999	-9999	-9999	-97	-50	15	10	7	-4	39	142	268	402	553	800	1190	1591	1845	1997	2145
-9999	-9999	-9999	-105	-54	11	14	19	15	69	172	285	399	540	785	1173	1570	1831	1997	2152
-9999	-9999	-9999	-94	-54	5	15	27	34	99	204	307	407	546	801	1189	1574	1826	1992	2149
-9999	-9999	-9999	-9999	-41	1	18	34	54	125	226	327	428	582	858	1248	1608	1834	1986	2140
-9999	-9999	-9999	-9999	-32	0	23	43	74	147	244	349	469	654	955	1336	1653	1846	1985	2136
-9999	-9999	-9999	-9999	-31	2	30	55	93	169	264	376	524	752	1075	1425	1688	1851	1988	2138
-9999	-9999	-9999	-63	-27	5	39	67	112	192	284	400	575	846	1184	1492	1701	1847	1992	2142
-9999	-9999	-9999	-62	-18	9	48	78	131	215	301	411	596	897	1245	1520	1698	1841	1994	2148

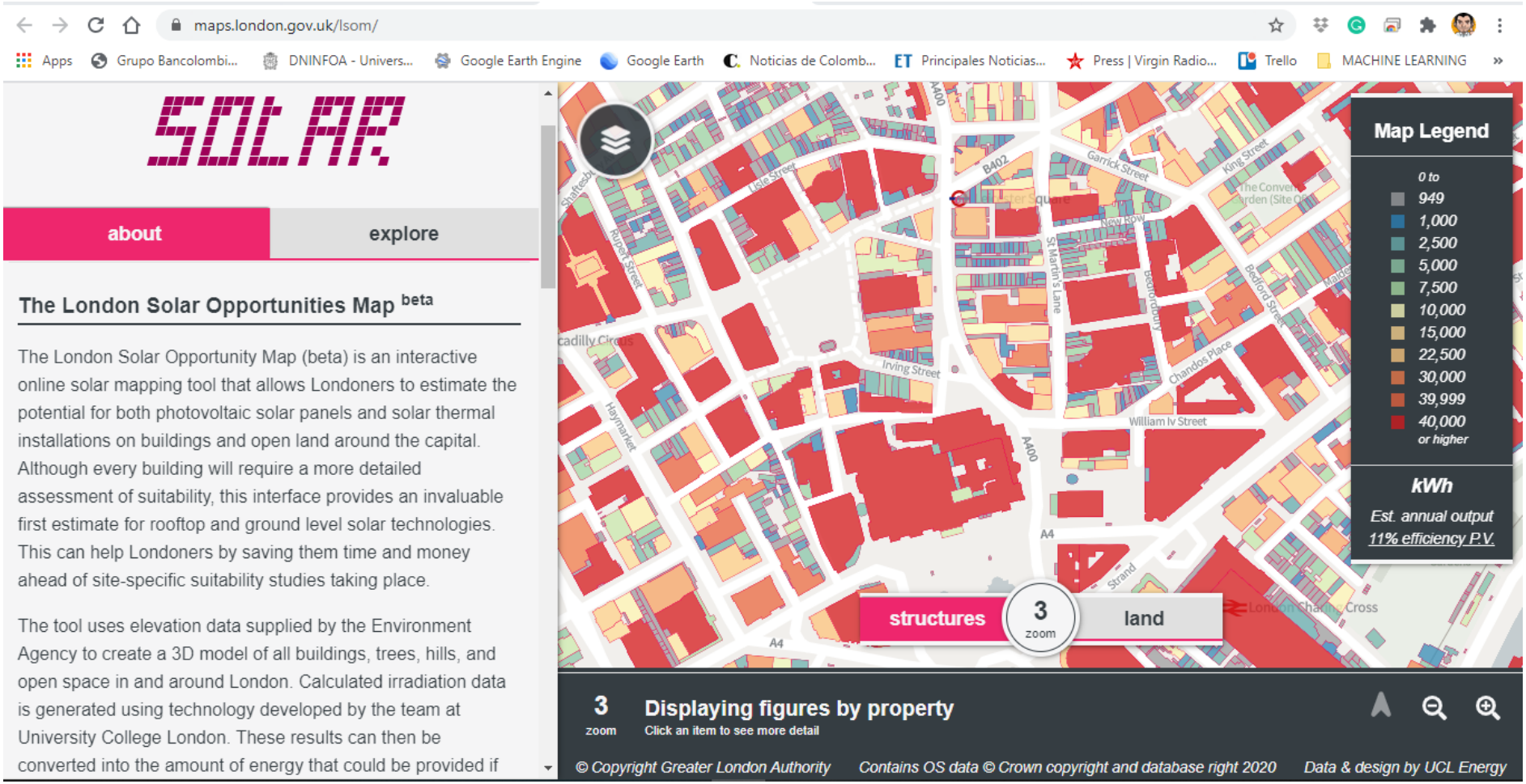
https://geo-python.github.io/site/lessons/L1/motivation.html



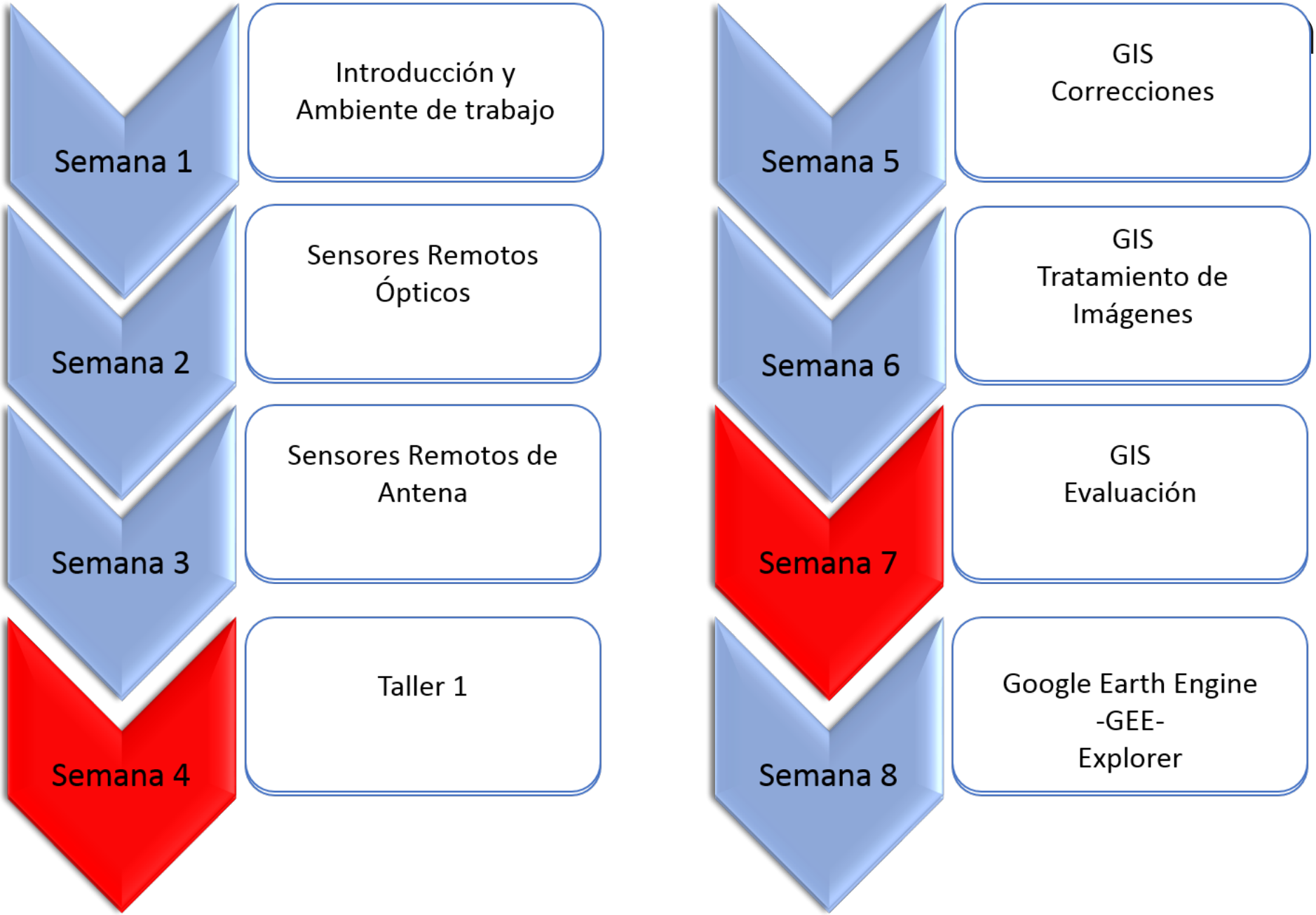
Global mean temperature anomalies from 1880-2011. Source: https://www.ncdc.noaa.gov/sotc/global/201113

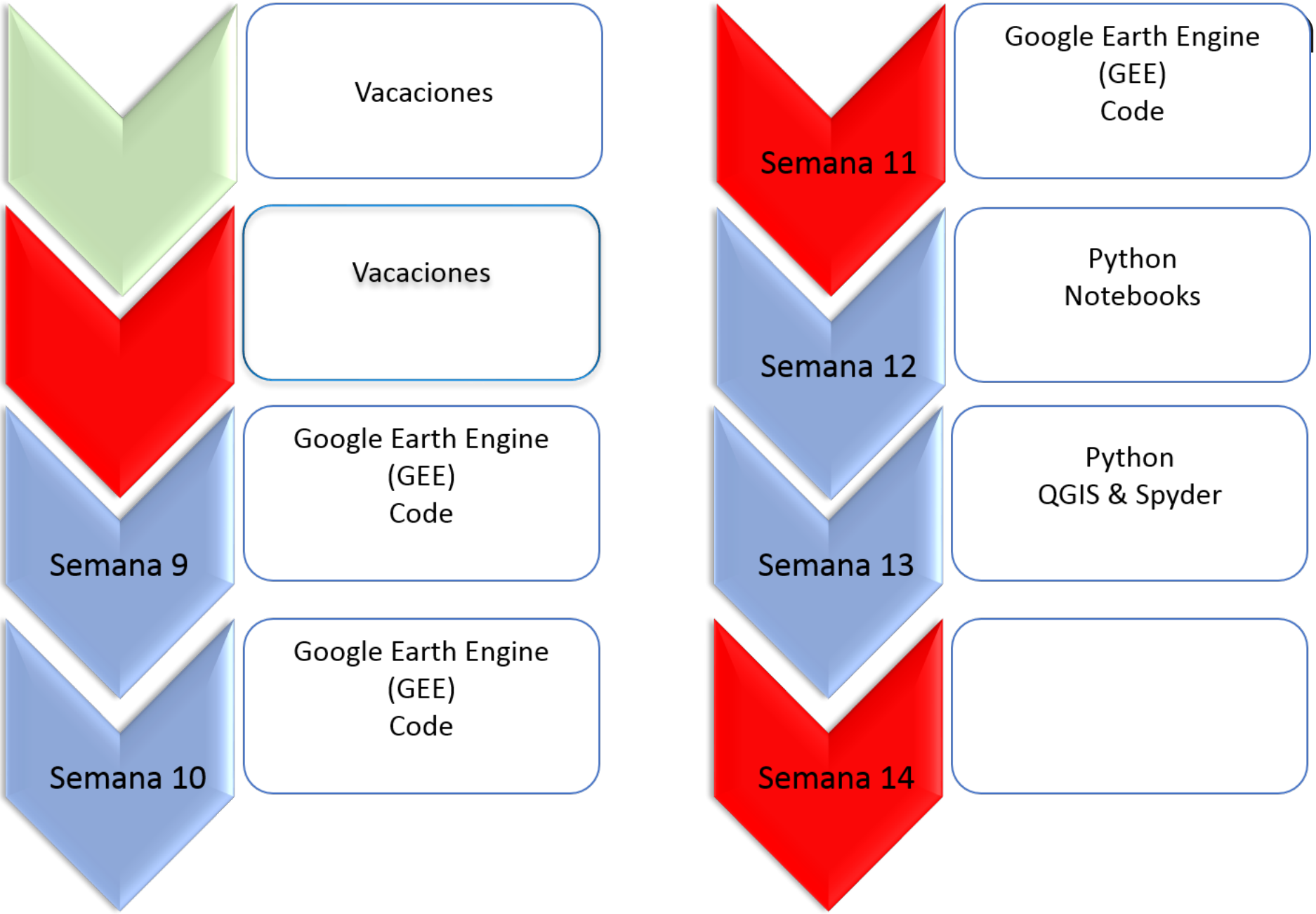


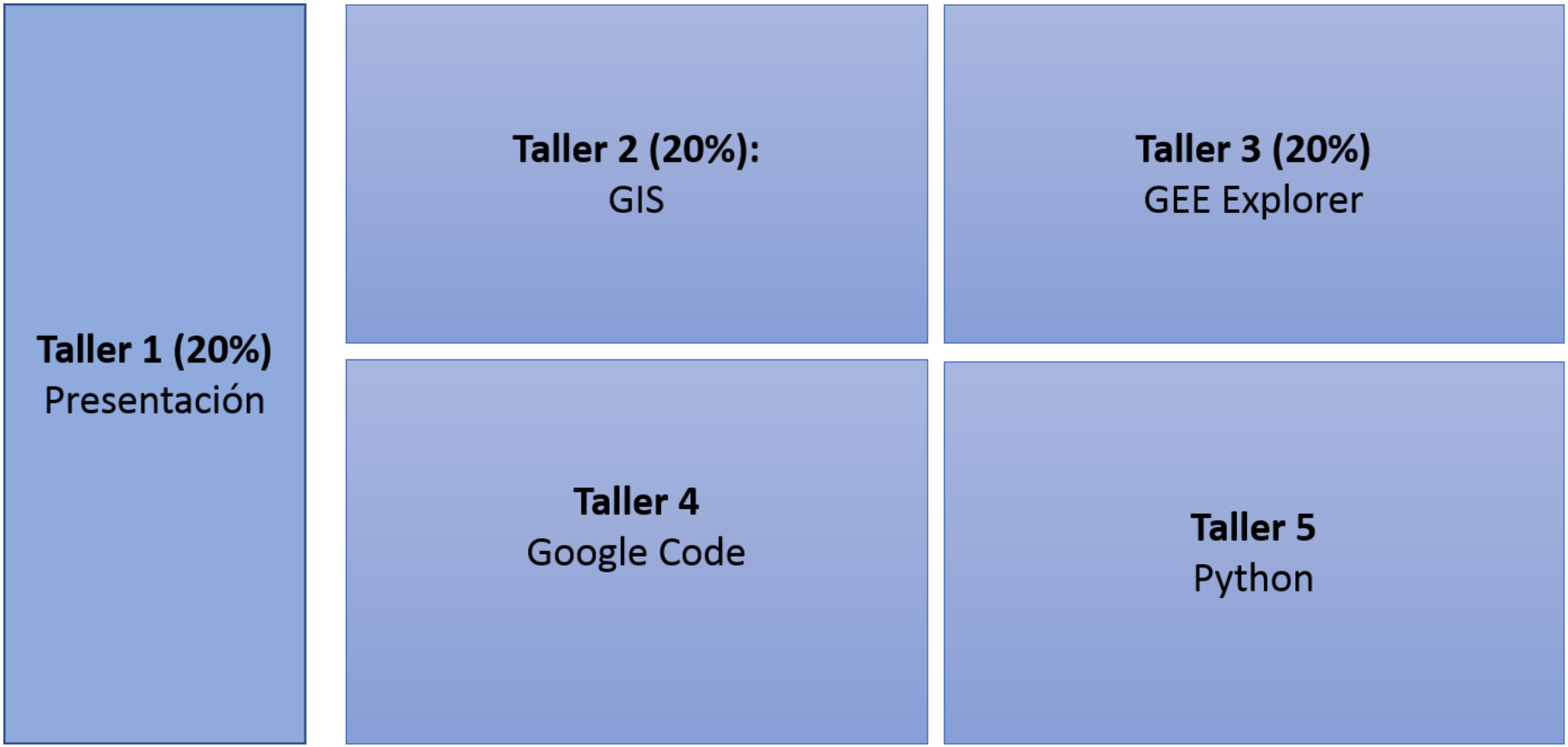
Global temperature anomalies for March 2018. Source: https://www.ncdc.noaa.gov/sotc/global/201803



https://maps.london.gov.uk/lsom/


Semana 1
Introducción y Ambiente de trabajo
Semana 2
Sensores Remotos Ópticos
Semana 3
Sensores Remotos de Antena
Semana 4
Taller 1
Semana 5
GIS Correcciones
Semana 6
GIS Tratamiento de Imágenes
Semana 7
GIS Evaluación
Semana 8
Google Earth Engine -GEE- Explorer


Vacaciones
Vacaciones
Semana 9
Google Earth Engine
(GEE)
Code
Semana 10
Google Earth Engine
(GEE)
Code
Semana 11
Google Earth Engine
(GEE)
Code
Semana 12
Python
Notebooks
Semana 13
Python
QGIS & Spyder
Semana 14


Taller 1 (20%)
Presentación
Taller 2 (20%):
GIS
Taller 3 (20%)
GEE Explorer
Taller 4
Google Code
Taller 5
Python