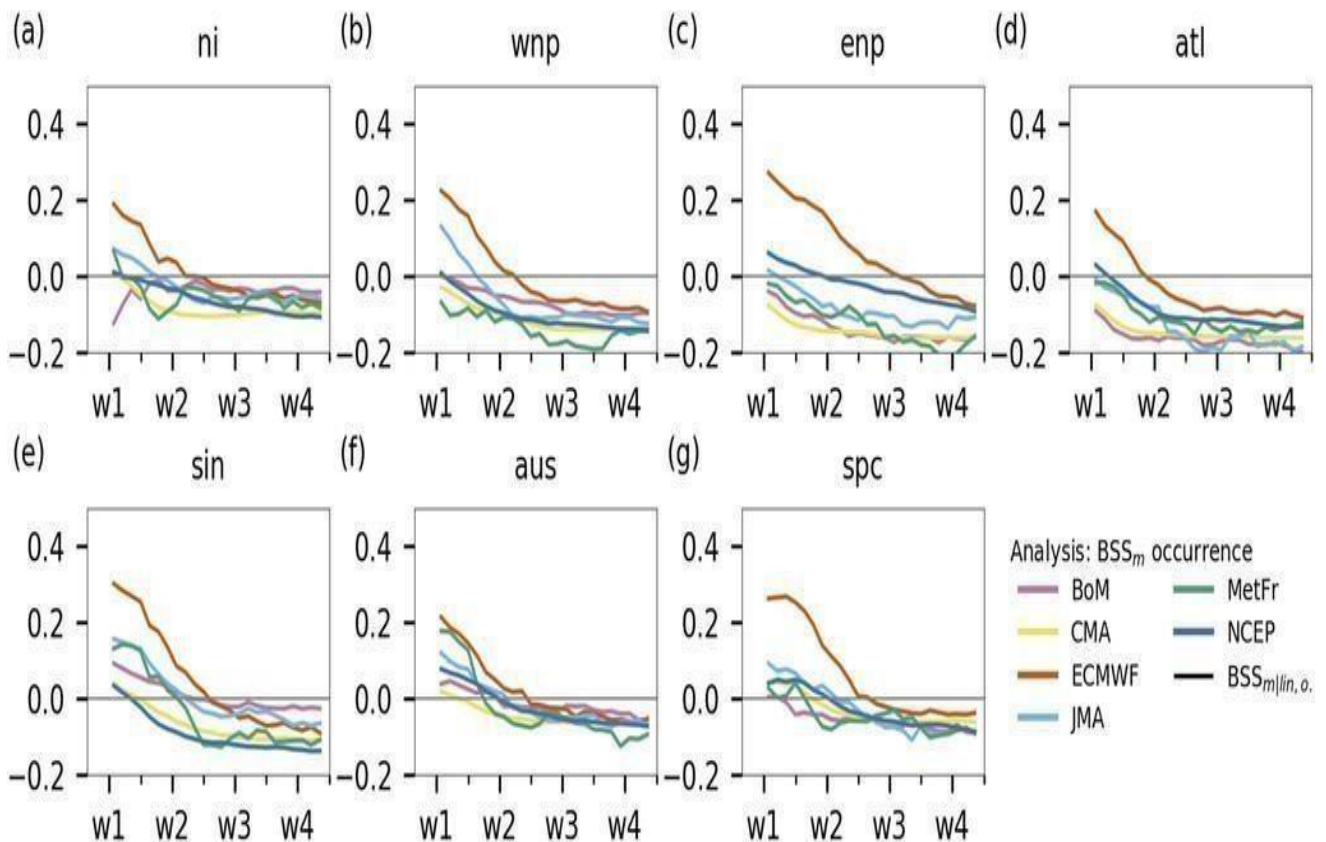


Sprint-1

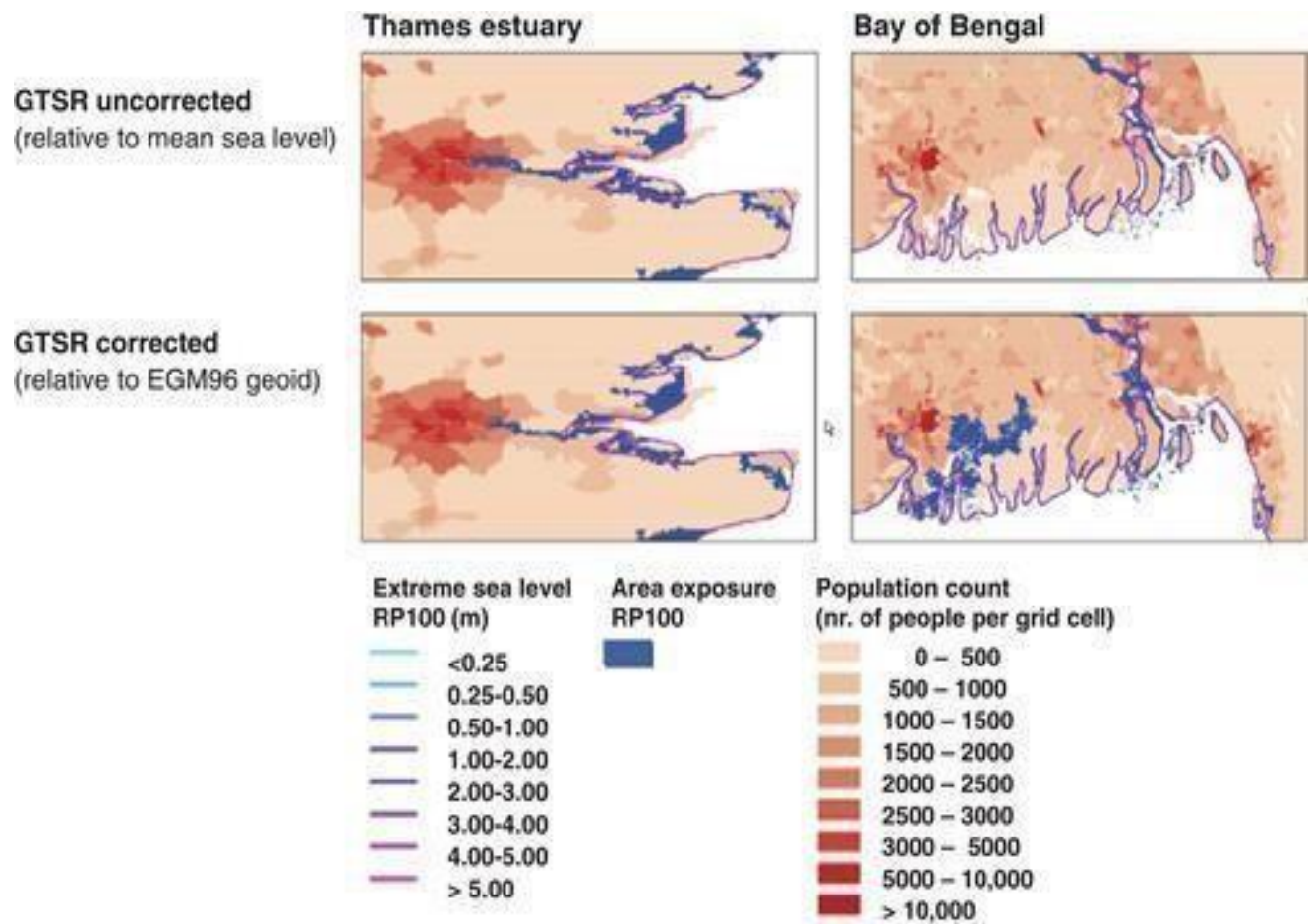
Simulation Creation (Connect Sensor Arduino with Python code)

Date	24 November2022
Team ID	PNT2022TMID49008
Project Name	Natural Disasters Intensity Analysis and Classification using Artificial Intelligence
Maximum Marks	20 Marks

CYCLONE



FLOOD



Knowing your community's evacuation route and warning signals, and identifying areas prone to flooding or landslides.

EARTH QUAKE

Model	Rescale Numeric	Train/ Test Split	Data Sampling	Data Grouping	Manual Parameter Tuning	Grid Search	Manual Drop Features	Feature Selection Function	Accuracy
Random Forest									
Gorkar (2019)	Yes	Yes	No	No	No	No	No	No	0.721
Das (2019)	Yes	Yes	Yes	No	Simple	Yes	No	No	0.658
Ghimire (2019)	Yes	Yes	Yes	Yes	Simple	Yes	Yes	No	0.715
Mendes (2019)	Yes	Yes	Yes	No	No	No	Yes	Advance	0.63
XGBoost Classifier									
Mendes (2019)	Yes	Yes	Yes	No	No	No	Yes	Advance	0.646
Narayan (2019)	No	No	No	No	No	No	Yes	Simple	0.586
Logistic Regression									
Eliseev (2020)	Yes	Yes	No	No	No	No	Yes	No	0.74
Ghimire (2019)	Yes	Yes	Yes	Yes	Simple	Yes	Yes	No	0.47
Light GBM									
Das (2019)	Yes	Yes	Yes	No	Advance	N/A	No	No	0.784
Decision Tree									
Mendes (2019)	Yes	Yes	Yes	No	No	No	Yes	Advance	0.658

WILDFIRE

2.5.5 C-2, Boreal Spruce

Open, Rate of Spread in ch/hr
Multiply by 1.1 to get feet/min
Divide by 80 to get miles/hour
Divide by 3 to get meters/min

Torching, **Active Crown Fire**

Intensity Class	Flame Length	FLI W/m	FLI BTU/ft ² /sec
1	up to 1	10	3
2	up to 4	300	143
3	up to 8	2000	579
4	up to 12	4000	1156
5	up to 18	10000	2891

		Buildup Index (BUI)															
		10	30	50	70	90	110	130	150	170	190						
1	0.3	1	1	2	2	2	2	2	2	2	2						
2	0.9	3	4	4	5	5	5	5	5	5	5						
3	2	6	7	8	8	9	9	9	9	9	9						
4	3	8	11	12	12	13	13	13	13	14	14						
5	4	11	13	16	17	18	18	18	18	19	19						
6	5	13	19	21	22	23	23	23	23	24	24						
7	6	18	23	26	27	28	28	28	28	29	29						
8	7	22	28	31	32	34	34	34	34	35	35						
9	8	25	32	36	38	39	40	41	41	41	42						
10	9	29	37	41	43	45	46	47	48	48	49						
11	10	33	42	46	49	51	52	53	54	54	54						
12	11	37	47	52	55	57	58	59	59	60	61						
13	12	41	52	57	61	63	64	66	66	67	67						
14	14	45	57	63	66	69	70	71	73	74	74						
15	15	49	62	68	72	75	77	78	79	80	80						
16	16	52	66	74	78	81	82	84	85	86	86						
17	17	56	71	79	84	87	89	90	91	92	92						
18	18	60	76	84	89	93	95	97	98	99	99						
19	20	64	81	90	95	99	101	103	104	105	105						
20	21	68	86	95	101	104	107	109	111	112	112						
21	22	72	91	100	106	110	113	115	117	118	118						
22	23	75	95	106	112	116	119	121	123	124	124						
23	24	79	100	111	117	122	125	127	129	130	130						
24	25	83	105	116	123	127	130	133	135	136	136						
25	26	86	109	121	128	133	136	139	141	142	142						
26	27	90	114	126	133	138	142	144	146	147	147						
27	28	93	118	131	138	143	147	150	152	154	154						
28	29	97	122	136	144	149	153	155	158	159	159						
29	30	100	127	140	149	154	158	161	163	165	165						
30	31	103	131	145	153	159	163	166	168	170	170						
31	32	106	135	150	158	164	168	171	174	176	176						
32	33	110	139	154	163	169	173	176	179	181	181						
33	34	113	143	158	168	174	178	181	184	186	186						
34	35	116	147	163	172	179	183	186	189	191	191						
35	36	119	151	167	177	183	188	191	194	196	196						
36	37	122	155	171	181	188	193	196	199	201	201						
37	38	125	158	175	185	192	197	201	204	206	206						
38	39	128	162	179	190	197	202	205	208	210	210						
39	40	130	165	183	194	201	206	210	213	215	215						
40	41	133	169	187	198	205	210	214	217	220	220						

AK Fire Behavior Prediction (FBP) Field Guide

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Fire Behavior Tables

The number in each cell represents a Rate of Spread (in chains per hour)

The background color in that cell represents the flame length/intensity class. Table at top is for reference

The font represents the fire type; bold white for **Active Crown Fire** and *torching behavior*

Artificial intelligence allows researchers to “clean up data” around air quality and weather patterns and predict possible wildfires in a way that is much faster than before.