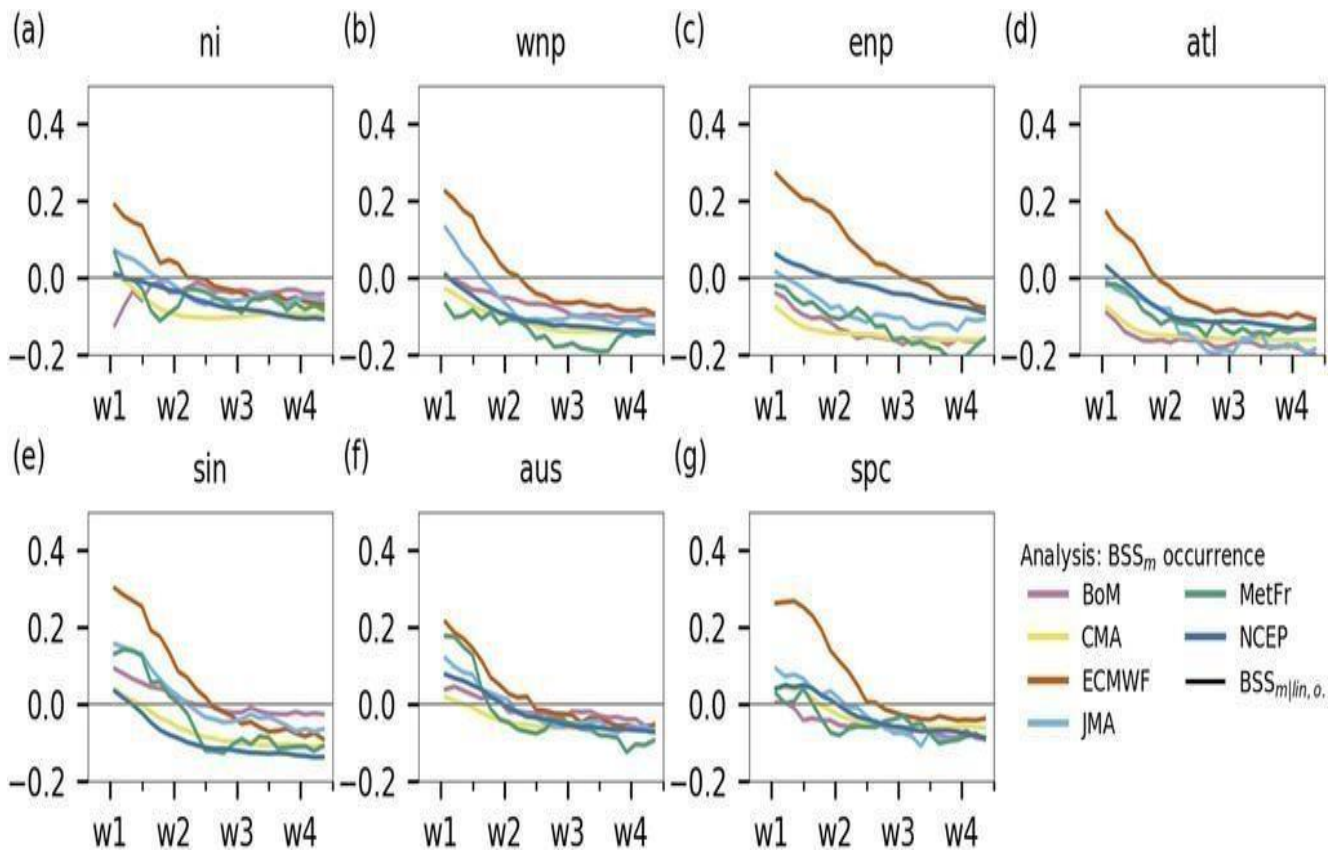


Sprint-1

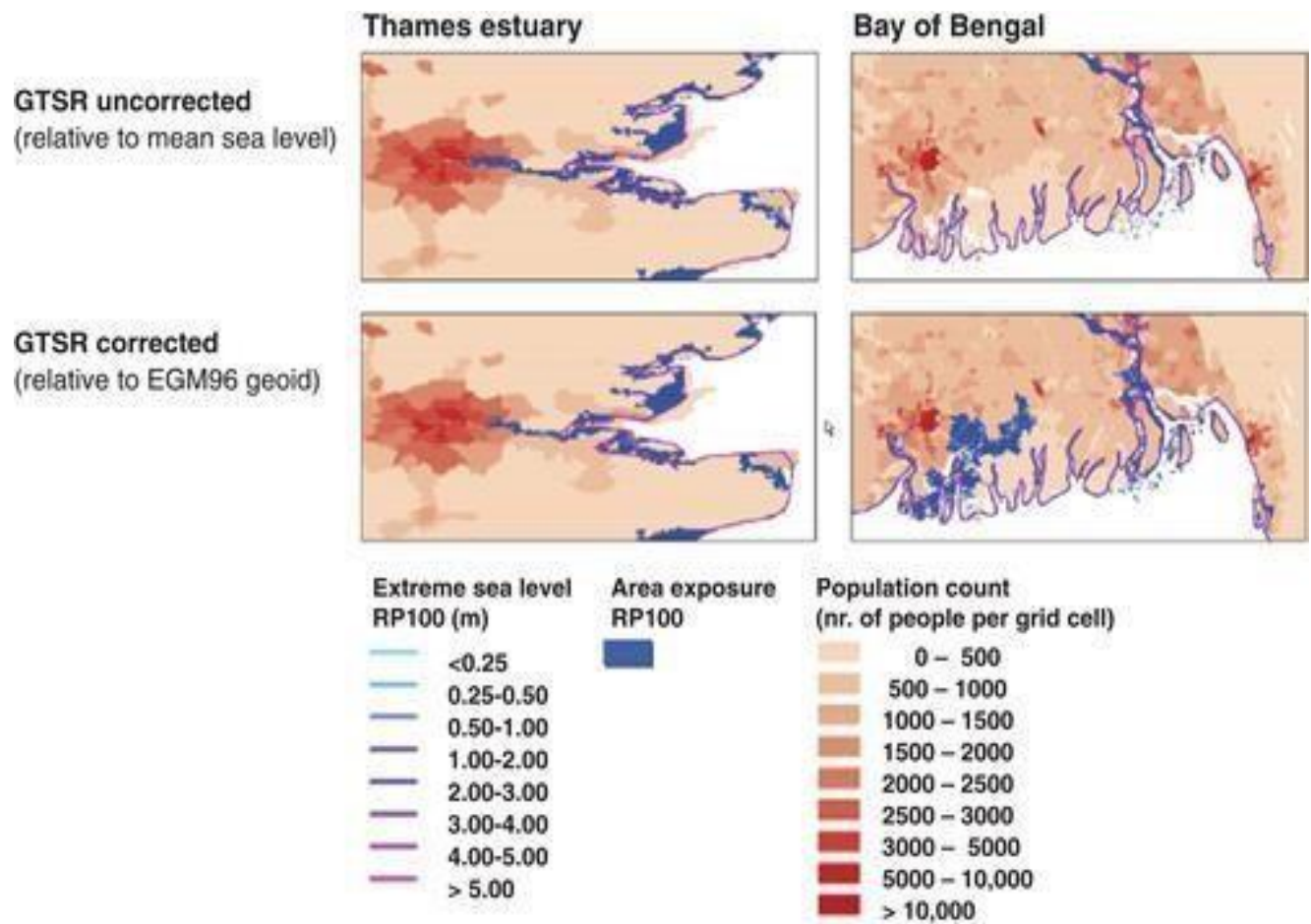
Simulation Creation (Connect Sensor Arduino with Python code)

Date	14 November2022
Team ID	PNT2022TMID28120
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 Sampl ing	Data Group ing	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

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

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.