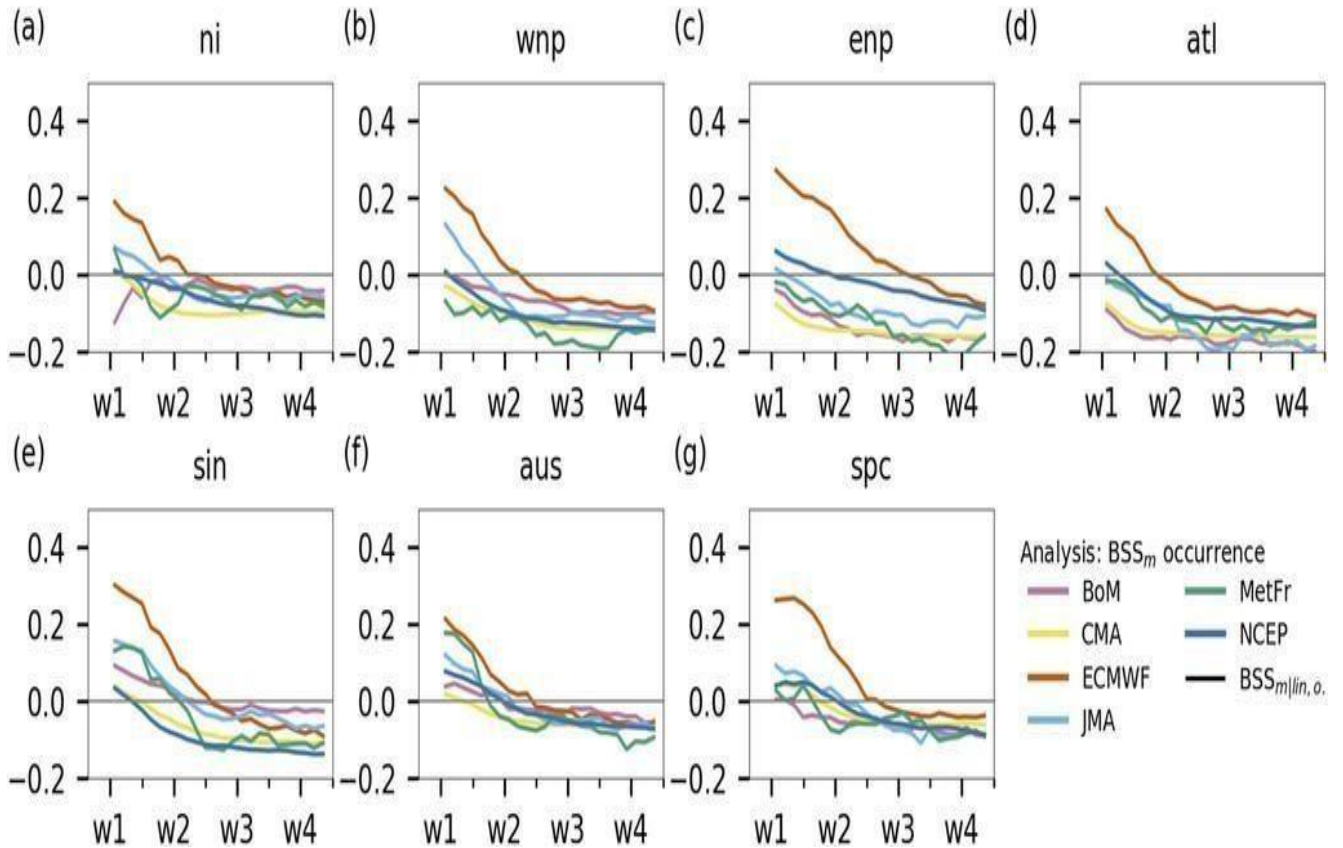


## Sprint-1

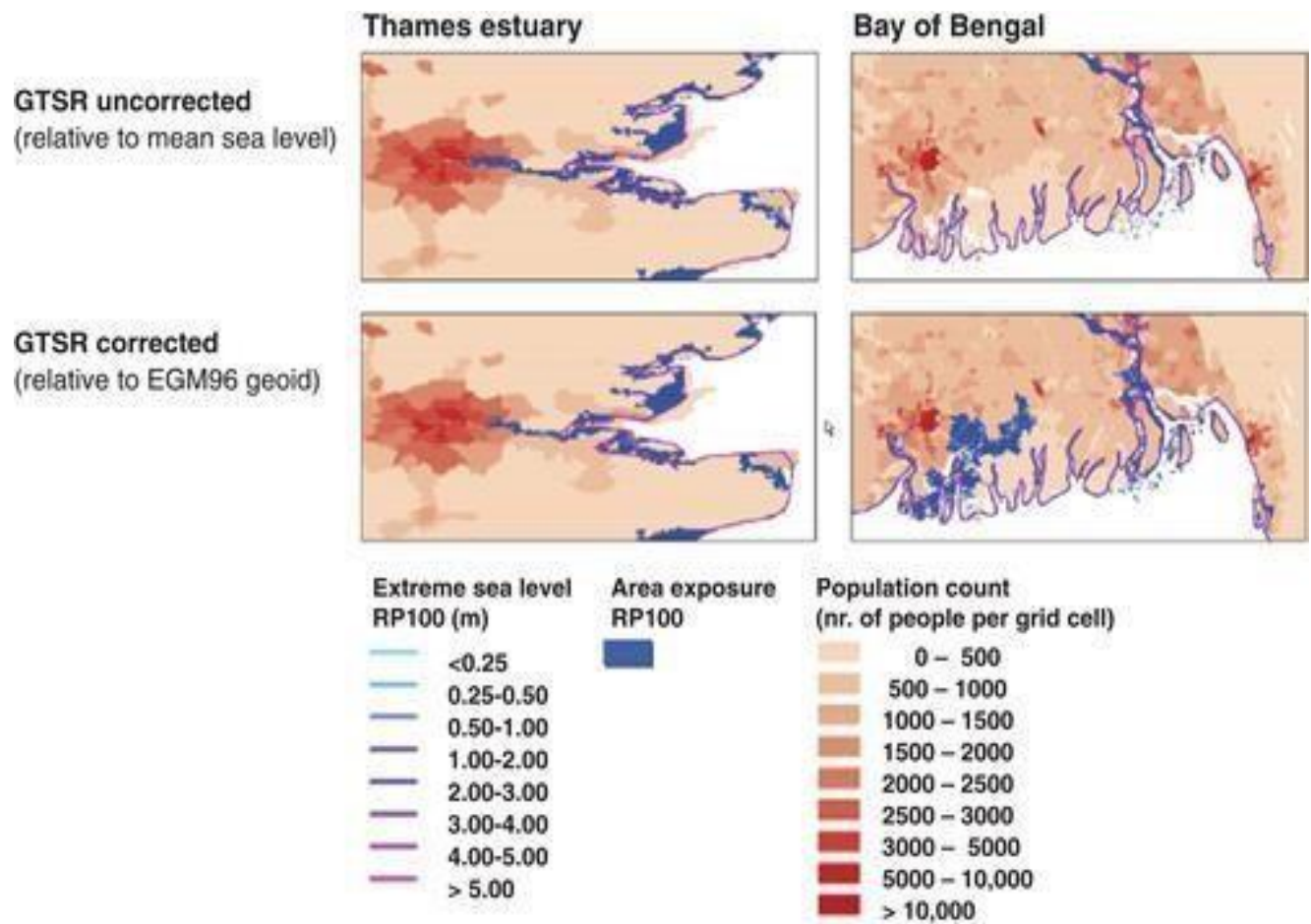
### Simulation Creation (Connect Sensor Arduino with Python code)

Date	16 November2022
Team ID	PNT2022TMID37828
Project Name	Natural Disasters Intensity Analysis and Classification using Artificial Intelligence
Maximum Marks	20 Marks
Team members	Mohamed Asarudeen,Shamir Ahmed,Ameed Ibrahim,Shaik Abdullah,Sudharsan

### 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
<b>Random Forest</b>									
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
<b>XGBoost Classifier</b>									
Mendes (2019)	Yes	Yes	Yes	No	No	No	Yes	Advance	0.646
Narayan (2019)	No	No	No	No	No	No	Yes	Simple	0.586
<b>Logistic Regression</b>									
Eliseev (2020)	Yes	Yes	No	No	No	No	Yes	No	0.74
Ghimire (2019)	Yes	Yes	Yes	Yes	Simple	Yes	Yes	No	0.47
<b>Light GBM</b>									
Das (2019)	Yes	Yes	Yes	No	Advance	N/A	No	No	0.784
<b>Decision Tree</b>									
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
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	15	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	47	48	48
11	10	33	42	46	49	51	52	53	54	54	54
12	11	37	47	52	55	57	58	59	59	61	61
13	12	41	52	57	61	63	64	66	66	67	67
14	13	45	57	63	66	69	70	71	73	74	74
15	14	49	62	68	72	75	77	78	79	80	80
16	15	52	66	74	78	81	82	84	85	86	86
17	16	56	71	79	84	87	89	90	91	92	92
18	17	60	76	84	89	93	95	97	98	99	99
19	18	64	81	90	95	99	101	103	104	105	105
20	19	68	86	95	101	104	107	109	111	112	112
21	20	72	91	100	106	110	113	115	117	118	118
22	21	75	95	106	112	116	119	121	123	124	124
23	22	79	100	111	117	122	125	127	129	130	130
24	23	83	105	116	123	127	130	133	135	136	136
25	24	86	109	121	128	133	136	139	141	142	142
26	25	90	114	126	133	138	142	144	146	147	147
27	26	93	118	131	138	143	147	150	152	154	154
28	27	97	122	136	144	149	153	155	158	159	159
29	28	100	127	140	149	154	158	161	163	165	165
30	29	103	131	145	153	159	163	166	168	170	170
31	30	106	135	150	158	164	168	171	174	176	176
32	31	110	139	154	163	169	173	176	179	181	181
33	32	113	143	158	168	174	178	181	184	186	186
34	33	116	147	163	172	179	183	186	189	191	191
35	34	119	151	167	177	183	188	191	194	196	196
36	35	122	155	171	181	188	193	196	199	201	201
37	36	125	158	175	185	192	197	201	204	206	206
38	37	128	162	179	190	197	202	205	208	210	210
39	38	130	165	183	194	201	206	210	213	215	215
40	39	133	169	187	198	205	210	214	217	220	220

AK Fire Behavior Prediction (FBP) Field Guide

Page 23 of 49

## 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.