— EXAMPLES OF WORK DONE

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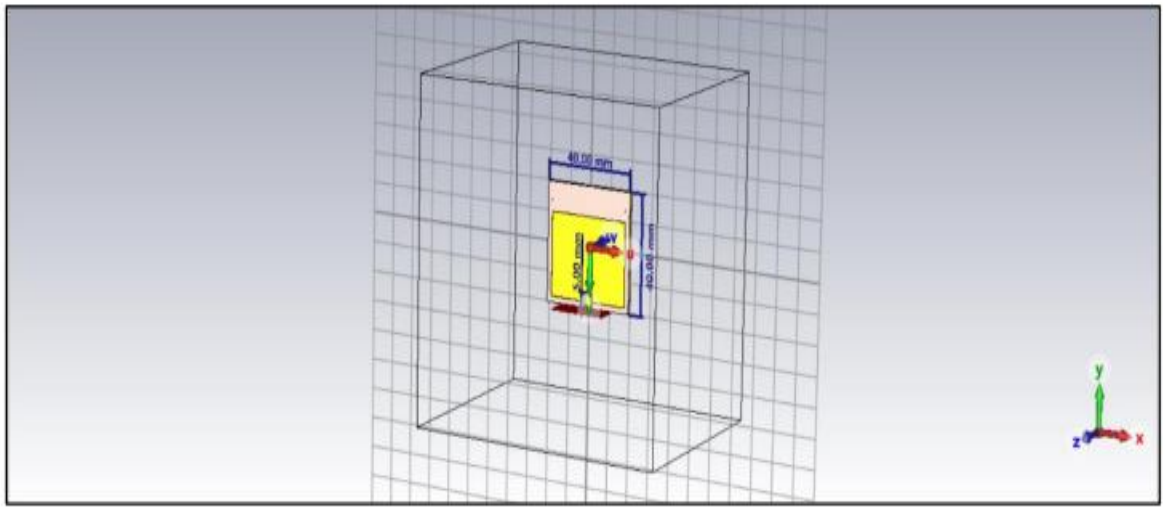
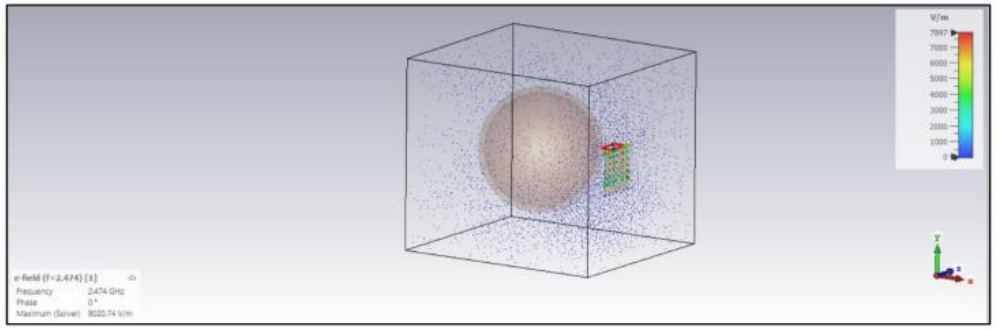
Microstrip Antenna Design to Detect Brain Tumour

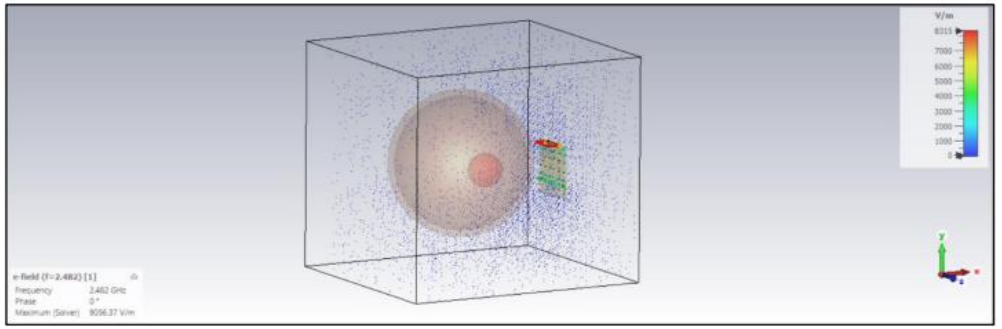
- The antenna was designed at a frequency of 2.4 GHz. The tumor was detected by determining the specific absorption rate (SAR) for the head phantom and then the result was analysed.
- Software Used : CST Studio Suite



Without Tumor:

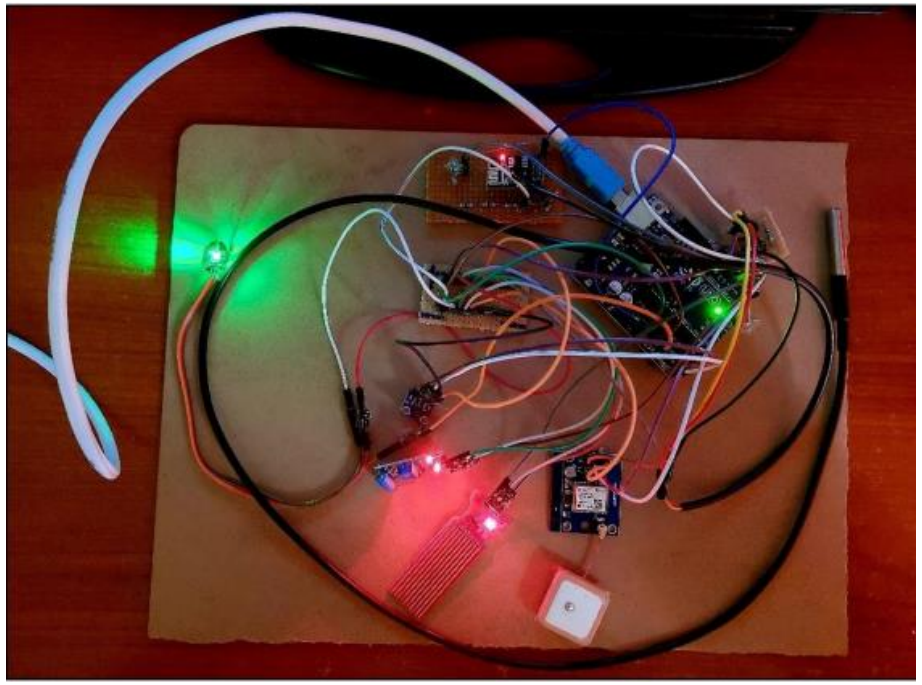


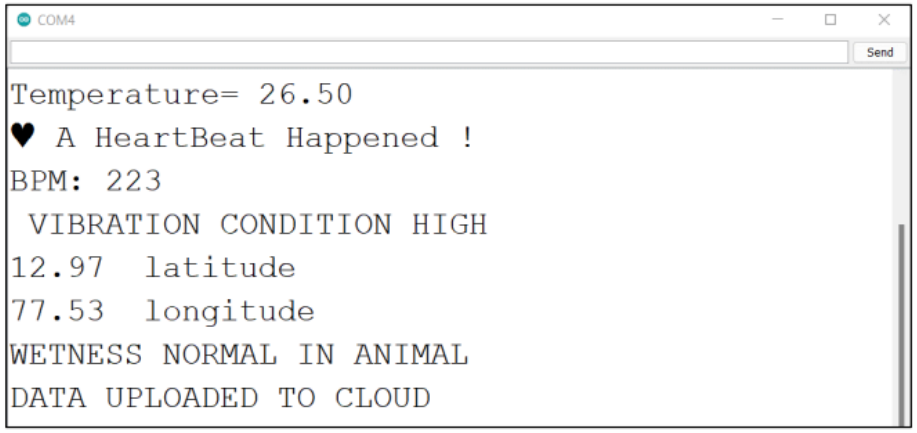
With Tumor:



Pet Health Monitoring System

- A prototype of a wearable device for animals which monitors the health in terms of different parameters such as the temperature, pulse rate, heartbeat, oxygen saturation and so on with also GPS tracking.
- Displayed the results on ThingSpeak
- Hardware used: Arduino UNO
- Program written in C





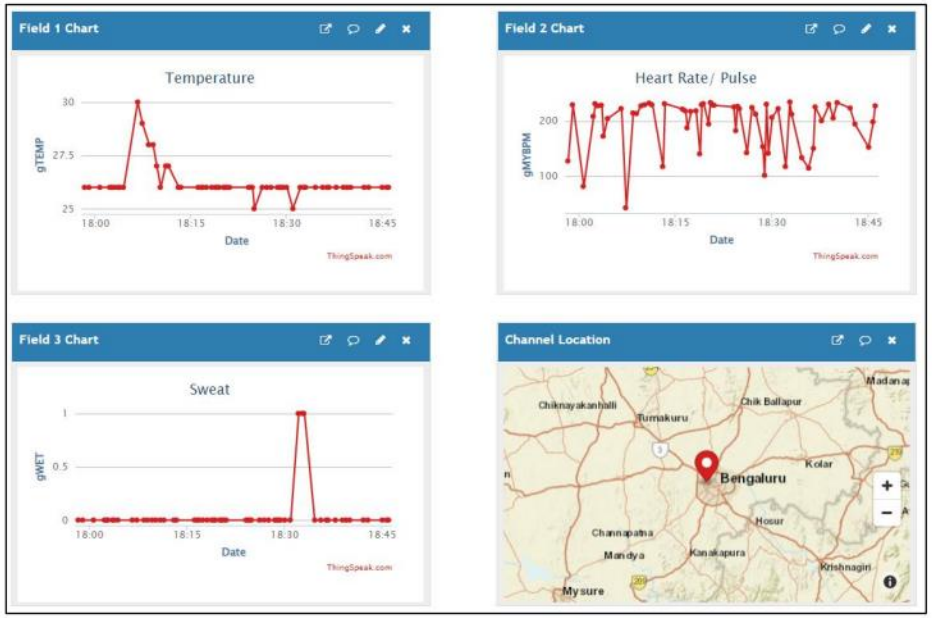
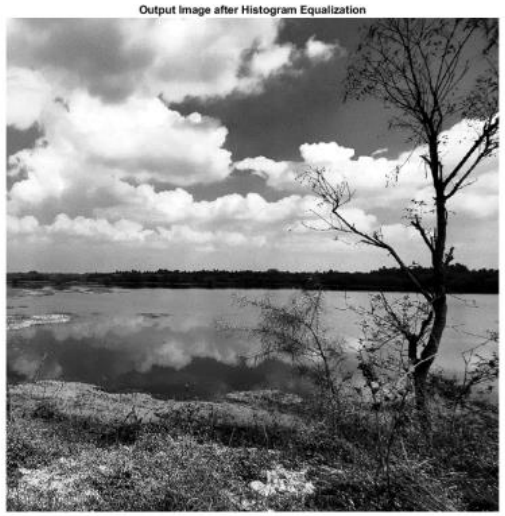
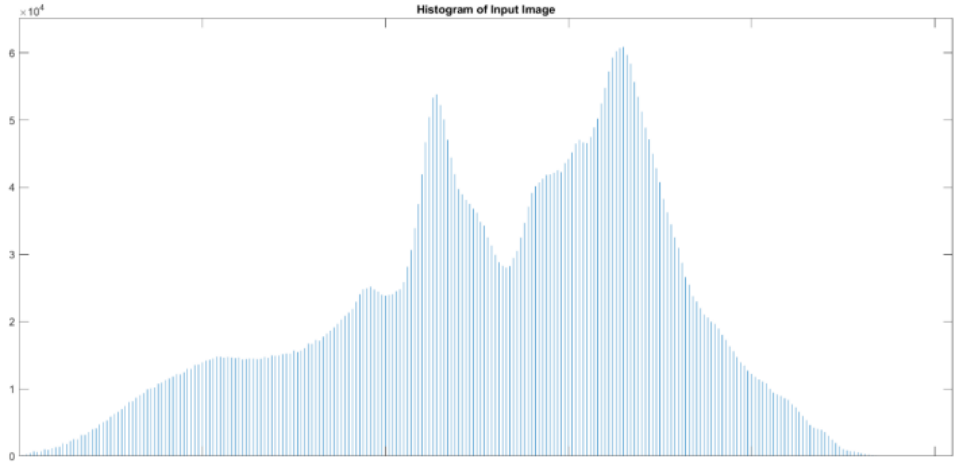
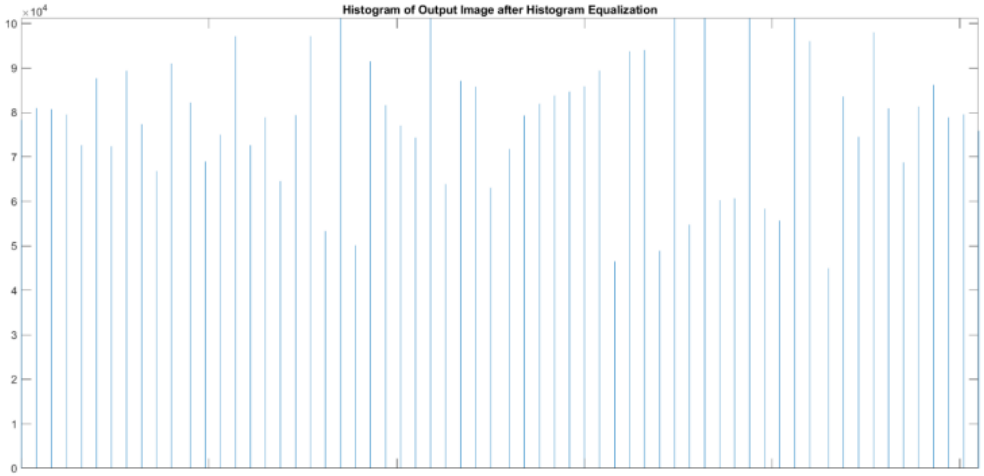


Image Processing using MATLAB

- Used MATLAB in enhancement of an image via Histogram Equalisation.





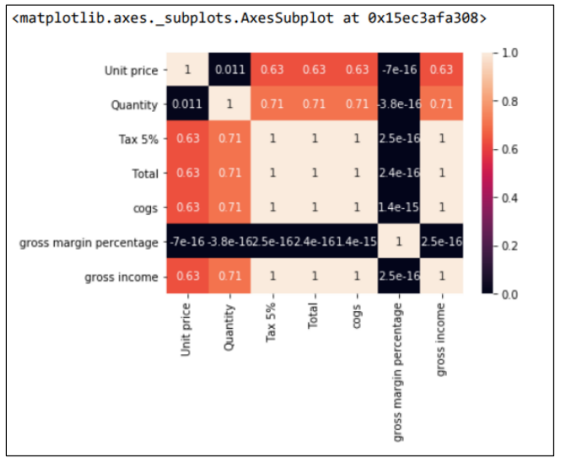


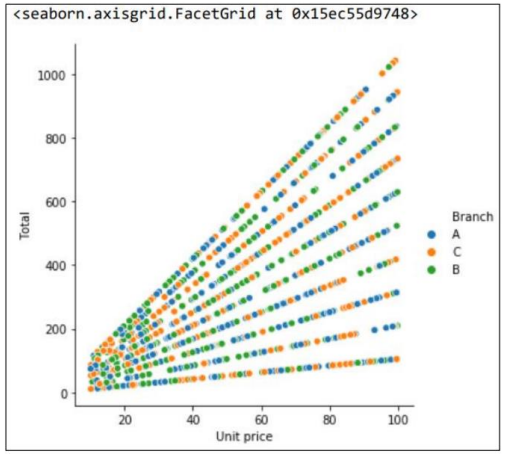
Exploratory Data Analysis on Supermarket Sales Dataset

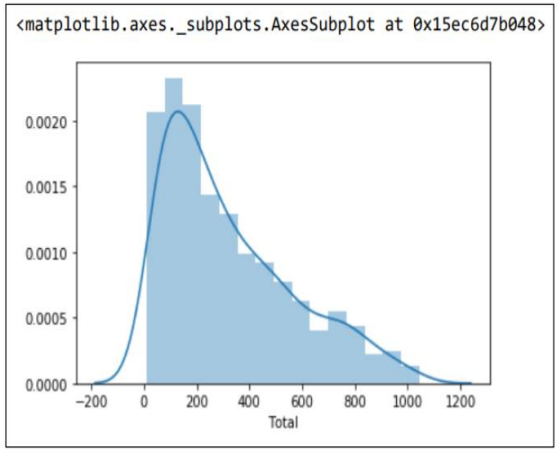
- Used Python to understand the data, clean it and find the relationship between variables.

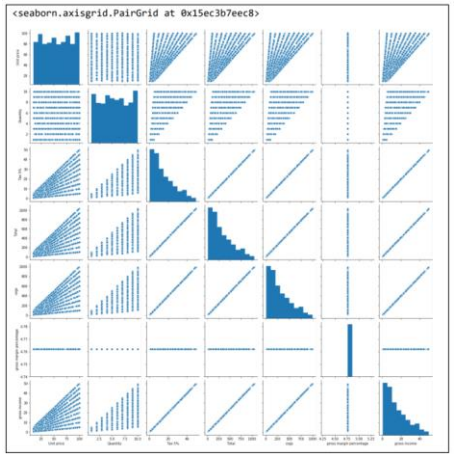
Invoice ID	Branch	City	Customer	Gender	Product line	Unit price	Quantity	Tax 5%	Total	Date	Time	Payment	cogs	gross margin	gross income	Rating
750-67-8428	A	Yangon	Member	Female	Health and beauty	74.69	7	26.1415	548.972	#########	13:08	Ewallet	522.83	4.76190476	26.1415	9.1
226-31-3081	C	Naypyitaw	Normal	Female	Electronic accessories	15.28	5	3.82	80.22	#########	10:29	Cash	76.4	4.76190476	3.82	9.6
631-41-3108	A	Yangon	Normal	Male	Home and lifestyle	46.33	7	16.2155	340.526	#########	13:23	Credit card	324.31	4.76190476	16.2155	7.4
123-19-1176	A	Yangon	Member	Male	Health and beauty	58.22	8	23.288	489.048	1/27/2019	20:33	Ewallet	465.76	4.76190476	23.288	8.4
373-73-7910	A	Yangon	Normal	Male	Sports and travel	86.31	7	30.2085	634.379	#########	10:37	Ewallet	604.17	4.76190476	30.2085	5.3
699-14-3026	C	Naypyitaw	Normal	Male	Electronic accessories	85.39	7	29.8865	627.617	3/25/2019	18:30	Ewallet	597.73	4.76190476	29.8865	4.1
355-53-5943	A	Yangon	Member	Female	Electronic accessories	68.84	6	20.652	433.692	2/25/2019	14:36	Ewallet	413.04	4.76190476	20.652	5.8
315-22-5665	C	Naypyitaw	Normal	Female	Home and lifestyle	73.56	10	36.78	772.38	2/24/2019	11:38	Ewallet	735.6	4.76190476	36.78	8
665-32-9167	A	Yangon	Member	Female	Health and beauty	36.26	2	3.626	76.146	#########	17:15	Credit card	72.52	4.76190476	3.626	7.2
692-92-5582	B	Mandalay	Member	Female	Food and beverages	54.84	3	8.226	172.746	2/20/2019	13:27	Credit card	164.52	4.76190476	8.226	5.9
351-62-0822	B	Mandalay	Member	Female	Fashion accessories	14.48	4	2.896	60.816	#########	18:07	Ewallet	57.92	4.76190476	2.896	4.5
529-56-3974	B	Mandalay	Member	Male	Electronic accessories	25.51	4	5.102	107.142	#########	17:03	Cash	102.04	4.76190476	5.102	6.8
365-64-0515	A	Yangon	Normal	Female	Electronic accessories	46.95	5	11.7375	246.488	#########	10:25	Ewallet	234.75	4.76190476	11.7375	7.1
252-56-2699	A	Yangon	Normal	Male	Food and beverages	43.19	10	21.595	453.495	#########	16:48	Ewallet	431.9	4.76190476	21.595	8.2
829-34-3910	A	Yangon	Normal	Female	Health and beauty	71.38	10	35.69	749.49	3/29/2019	19:21	Cash	713.8	4.76190476	35.69	5.7
299-46-1805	B	Mandalay	Member	Female	Sports and travel	93.72	6	28.116	590.436	1/15/2019	16:19	Cash	562.32	4.76190476	28.116	4.5
656-95-9349	A	Yangon	Member	Female	Health and beauty	68.93	7	24.1255	506.636	#########	11:03	Credit card	482.51	4.76190476	24.1255	4.6
765-26-6951	A	Yangon	Normal	Male	Sports and travel	72.61	6	21.783	457.443	#########	10:39	Credit card	435.66	4.76190476	21.783	6.9
329-62-1586	A	Yangon	Normal	Male	Food and beverages	54.67	3	8.2005	172.211	1/21/2019	18:00	Credit card	164.01	4.76190476	8.2005	8.6
319-50-3348	B	Mandalay	Normal	Female	Home and lifestyle	40.3	2	4.03	84.63	#########	15:30	Ewallet	80.6	4.76190476	4.03	4.4
300-71-4605	C	Naypyitaw	Member	Male	Electronic accessories	86.04	5	21.51	451.71	2/25/2019	11:24	Ewallet	430.2	4.76190476	21.51	4.8
371-85-5789	B	Mandalay	Normal	Male	Health and beauty	87.98	3	13.197	277.137	#########	10:40	Ewallet	263.94	4.76190476	13.197	5.1
273-16-6619	B	Mandalay	Normal	Male	Home and lifestyle	33.2	2	3.32	69.72	3/15/2019	12:20	Credit card	66.4	4.76190476	3.32	4.4

	Unit price	Quantity	Tax 5%	Total	cogs	gross margin percentage	i
count	1000.000000	1000.000000	1000.000000	1000.000000	1000.00000	1.000000e+03	1000.(
mean	55.672130	5.510000	15.379369	322.966749	307.58738	4.761905e+00	15.:
std	26.494628	2.923431	11.708825	245.885335	234.17651	6.220360e-14	11.'
min	10.080000	1.000000	0.508500	10.678500	10.17000	4.761905e+00	0.!
25%	32.875000	3.000000	5.924875	124.422375	118.49750	4.761905e+00	5.!
50%	55.230000	5.000000	12.088000	253.848000	241.76000	4.761905e+00	12.(
75%	77.935000	8.000000	22.445250	471.350250	448.90500	4.761905e+00	22.-
max	99.960000	10.000000	49.650000	1042.650000	993.00000	4.761905e+00	49.(









Guided PYTHON Projects from IIT Kanpur Certification Course

- Regression for Machine Learning – SCIKIT Linear Regression IRIS Dataset
- Logistic Regression for Machine Learning – SCIKIT Logistic Regression, Purchase/ Shopping Data
- PCA for Machine Learning – SCIKIT Logistic Regression, Purchase/ Shopping Data
- Naïve Bayes Clustering: SCIKIT, Purchase Data
- Decision Tree Classifier – Purchase Logistic Data Set
- Neural Networks – Mobile Prices Dataset
- Deep Learning for Digit Classification, MNIST Digit Data Set
- Comprehensive Application of ML Algorithms and Evaluation of Efficiency – Wine Data Set

Projects/Assignments at University of Liverpool

- **COMP518 – Database and Information Systems**

- Perform relational database queries using relational algebra and design an (Enhanced) Entity-Relationship diagram.
- Develop the logical data model from an Entity-Relationship diagram and decompose large tables through normalisation.
- Create a relational database and express queries to a relational database using SQL.

- **COMP527 – Data Mining and Visualisation**

- Implementation of Binary Classification(Perceptron) algorithm.
- Implementation of Clustering(K-Means) algorithm.

- **COMP534 – Applied Artificial Intelligence**

- Hyperparameter Tuning for Supervised Learning Algorithms.
- Deep-Learning with MLP and CNN on EMNIST Dataset.
- Semantic Segmentation on CamVid Dataset.

- **COMP532 – Machine Learning and BioInspired Optimisation**

- Exploration and Exploitation in Multi-Armed Bandits for Reinforcement Learning.
- Design a DQN game from OpenAI Gym Enivronment.

Thank You!