

Michael Seebregts SBRMIC008 Topic Ideas

Thyroid Cancer

Q: What are the most important factors for predicting thyroid cancer malignancy

Patient information:

- 1) Patient ID
- 2) Age
- 3) Gender
- 4) Country
- 5) Ethnicity
- 6) Family history
- 7) Radiation exposure
- 8) Iodine deficiency
- 9) Smoking status
- 10) Obesity status
- 11) Diabetes
- 12) TSH level
- 13) T3 level
- 14) T4 level
- 15) Nodule size
- 16) Thyroid cancer risk
- 17) Diagnosis

Data contains roughly 213000 points with 15 predictors and 1 response variable.

Source:

- <https://www.kaggle.com/datasets/bhargavchirumamilla/thyroid-cancer-risk-dataset/data>

Brain Scan

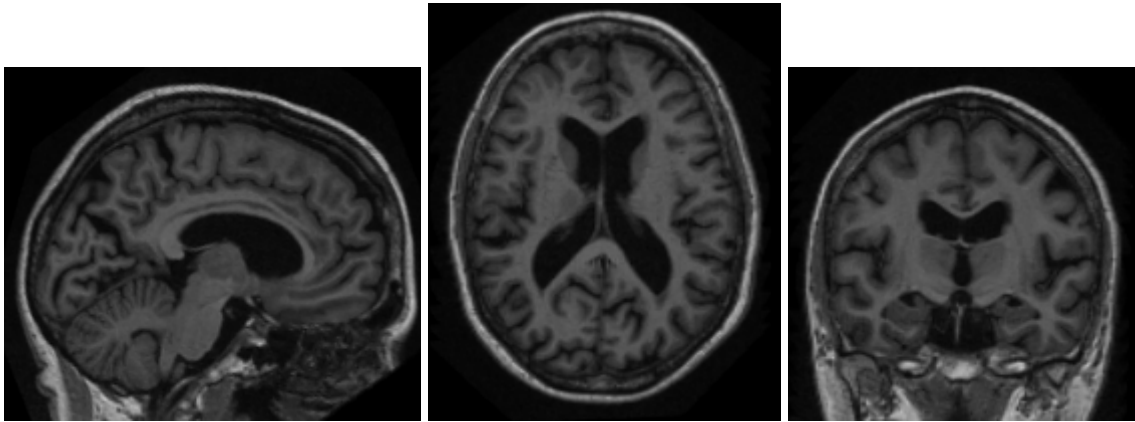
Q: Can Multivariate brain imaging predict Alzheimers

Patient Information:

- 1) SESSION ID
- 2) AGE - age of patients
- 3) M/F - whether patient is male or female
- 4) HAND - dominant hand of the patient
- 5) EDUC - education level of the patient
- 6) SES - socio economic status of the patient
- 7) CDR - clinical dementia rating of the patient
- 8) MMSE - mini mental state examination (test scoring their memory, attention and problem solving)
- 9) eTIV - estimated total volume of the skull

- 10) ASF - factor used to normalize brain measurements
- 11) nWBV - total brain volume, normalized for intracranial volume

Brain scans of patients:



Data contains 62 observations with 9 predictors along with the 3 brain scans and 1 predictor, being clinical dementia rating.

Source:

- <https://sites.wustl.edu/oasisbrains/home/oasis-1/>

Malaria Prevention

Q: How do climate factors impact Malaria in Ethiopia

Climate information:

- 1) Timezone
- 2) Longitude
- 3) City name
- 4) Latitude
- 5) Visibility
- 6) Rainfall
- 7) Temperature average
- 8) Temperature minimum
- 9) Temperature maximum
- 10) What the temperature feels like
- 11) Pressure
- 12) Humidity
- 13) Dew point
- 14) Cloud coverage
- 15) Wind speed
- 16) Gust

Malaria information:

- 1) Number of people infected with malaria in Ethiopia, by city

Data contains weekly information for all this information for the past 10 years. Therefore 512 data points with 16 predictor variables and 1 response variable.

Source:

- Climate information comes from Jembi Health Systems.
- Malaria Data: <https://epi.gov.et/download/weekly-epidemiological-bulletin/>