



Early Gastric Cancer prediction from Diet and Epidemiological data using Machine Learning

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Abstract: Gastric cancer is predominantly caused by demographic and diet factors as compared to other cancer types. The aim of the study is to predict Early Gastric Cancer (EGC) from diet and lifestyle factors using supervised machine learning algorithms. For this study, 80 patients and 160 healthy individual cases were selected. A dataset containing 10 features that are core risk factors for the gastric cancer were extracted. Supervised machine algorithms: Logistic Regression, Naive Bayes, Support Vector Machine (SVM), Multilayer perceptron, and Random Forest were used to analyze the dataset using Python Jupyter Notebook Version 3. The obtained classified results had been evaluated using metrics parameters: minimum_false_positives, brier_score, accuracy, precision, recall, F1_score, and Receiver Operating Characteristics (ROC) curve. Data analysis results showed Naive Bayes - 88, 0.11; Random Forest - 83, 0.16; SVM - 77, 0.22; Logistic Regression - 75, 0.25 and Multilayer perceptron - 72, 0.27 with respect to accuracy and brier_score in percent. Naive Bayes algorithm out performs with very low false positive rates as well as brier_score and good accuracy. Naive Bayes algorithm classification results in predicting ECG showed very satisfactory results using only diet cum lifestyle factors which will be very helpful for the physicians to educate the patients and public, thereby mortality of gastric cancer can be reduced/avoided with this knowledge mining work.



Biography:

Brindha Senthil Kumar is Postgraduate Scholar pursuing her M.Tech, final year in Mizoram University. She is well aquinted in C, C++, Java and Python. She is interested in applying Machine Learning algorithms to mine the information from Healthcare Data. She had been working in Bioinformatics domain and had published three research articles.

Publications:

Biochemical characterization, antimicrobial and hemolytic **studies** on skin mucus of fresh water spiny eel *Mastacembelus armatus*

Modelling the impact of a subsurface barrier on groundwater flow in the lower Palar River basin, southern India

Mizoram Butterflies Data Storage Retrieval Using Client-Server Technology.

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