**Offensive Language Detection on social media Based on Text Classification**

Cervical cancer is a vital public health issue that affects women worldwide. As it is a fatal disease, early risk prediction of cervical cancer can play an important role in prevention by raising public awareness of this disease. Early prediction using a Machine Learning (ML) model can be a beneficial solution for both healthcare professionals and people at risk. In this study, eleven supervised ML algorithms are utilized to forecast early jeopardies of this disease using a dataset from UCI ML repository. The ML models are rummaged to prophesy the early threats, and performance parameters like accuracy, precision, F1-score, re-call, and ROC-AUC are estimated. Finally, a reasonable analysis is performed, revealing that this study achieved 93.33% prediction accuracy with Multi-Layer Perceptron (MLP) algorithm with default hyperparameters. However, employing the hyperparameter tuning method with Grid Search Cross Validation (GSCV), K-Nearest Neighbors (KNN), Decision Tree Classifier (DTC), Support Vector Machine (SVM), Random Forest Classifier (RFC), and Multi-Layer Perceptron (MLP) all portrayed accuracy of 93.33%.

**EXISTING SYSTEM:**

In 2012, about 445,000 cases were discovered and almost 83% of all were new cases .Symptoms of cervical cancer include irregular periods, unexpected blood, and atypical menstruation. Hence, a pap smear test can diagnose cervical cancer and has been shown to reduce death risk by almost 90% and cervical cancer risk by 60% to 90% .However, the absence of medicinal equipment, inadequate nurturing, simple diagnostic reproducibility, careless maintenance, and ennui on the part of the specialists delivering the exam owing to its droning behavior are main drawbacks of this examination . According to statistics, half of all cervical cancer cases in America occur due to not checking, with another 10% not having been tested in the prior times. The Pap smear is a well-established screening test for cervical cancer. However, the Pap smear has a relatively low accuracy.

**DISADVANTAGES OF EXISTING SYSTEM:**

* the Pap smear is a relatively simple and inexpensive test.
* The Pap smear can only detect cervical cancer cells that are already present in the cervix.
* The Pap smear cannot detect precancerous cells that have the potential to develop into cervical cancer.
* **Algorithm**:

**PROPOSED SYSTEM:**

Many researchers have developed automated and computer-aided diagnosis systems for cervical cancer. These systems can reduce screening time and ease the diagnosis process. Sobar et al. achieved 91.67% accuracy with their classifier. Kashyap et al. achieved 95% accuracy with their SVM algorithm. Njoroge et al. achieved 72% accuracy with their FTIR spectroscopy-based classifier. Fazal et al. achieved 99.5% accuracy with their DBSCAN and random forest classifiers. Wu et al. achieved 99.1% accuracy with their SVM-PCA classifier. Hyeon et al. achieved 89.7% accuracy with their convolutional neural network and machine learning classifiers. In this study, eleven supervised machine learning models were employed, achieving accuracies of up to 93.33%. These findings could have a significant impact on computer-assisted diagnosis and e-healthcare systems.

**ADVANTAGES OF PROPOSED SYSTEM:**

* They can be used in remote areas where access to healthcare providers is limited.
* They can be used to train healthcare providers on how to diagnose cervical cancer.
* They can be used to monitor patients who are at high risk of developing cervical cancer.

**Algorithm**: : DTC, MLP, RFC, KNN, SVM, CatBoost (CatB), Gaussian Naïve Bayes (GNB), Gradient Boosting Classifier (GradB), AdaBoost (AdaB), XG Boost (XGB), XG Boost with Random Forest (XGBRF).

**SYSTEM REQUIREMENTS:**

**HARDWARE REQUIREMENTS:**

* System : Intel Core i7.
* Hard Disk : 1TB.
* Monitor : 15’’ LED
* Input Devices : Keyboard, Mouse
* Ram : 8GB.

**SOFTWARE REQUIREMENTS:**

* Operating system : Windows 11.
* Coding Language : Python
* Tool : PyCharm, Visual Studio Code
* Database : SQLite

**REFERENCES:**

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