Based on tumor characteristics, can cancer be predicted?

Two different machine learning models studied tumor characteristics to predict which tumors were cancerous. While both Logistic Regression and SVC models were used, the logistic regression model was fine tuned to increase accuracy. All three models showed good accuracy but with varying levels of recall. The SVC and Logistic Regression models had 6 instances that falsely identified malignant tumors as benign. The tuned Logistic Regression model performed better with 4 tumors falsely identified as benign.

Given the roughly equivalent measure of accuracy of all models, the higher recall makes the fine-tuned Logistic Regression model the best model to use. With only six tumor characteristic measurements, this model can reasonably accurately predict whether a tumor is cancerous or not.

Summarization of Model Performance

|  |  |  |  |
| --- | --- | --- | --- |
| Model | Logistic Regression | SVC | Fine-Tuned Logistic Regression |
| Accuracy | 0.88 | 0.91 | 0.92 |
| Recall | N/A | 0.84 | 0.90 |
| False Negatives | 6 | 6 | 4 |