**VIVA REPORT**

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| **Viva Report** | |
| Student Name | Himanshu |
| Project Title | TCS iON RIO-210: Build a Classification Model for Drug Trials Dataset |
| Academic Mentor Name | Self-Learning |
| Academic Mentor Remarks | My Top 5 Takeaway/learning from this internship is mentioned below: -  **1. Learning of Machine Learning Algorithms**  During my internship, I gained substantial hands-on experience with various machine learning algorithms, such as Random Forest, K-Nearest Neighbors (KNN), Gradient Boosting, and Logistic Regression. Implementing these algorithms to solve real-world healthcare data problems helped me understand their practical applications, strengths, and limitations. This experience solidified my technical foundation and prepared me for future data science challenges.  **2. Importance of Hyperparameter Tuning**  A significant learning point was the critical role of hyperparameter tuning in optimizing machine learning models. Using tools like RandomizedSearchCV, I was able to fine-tune the parameters of the Random Forest classifier, achieving an accuracy score of 83.45%. This process underscored the necessity of meticulous tuning to enhance model performance and reliability.  **3. Advanced Data Preprocessing Techniques**  I delved deeply into data preprocessing, including data cleaning, transformation, and reduction. These steps are crucial in preparing datasets for effective modeling and ensuring the validity of predictive insights. This experience taught me the importance of thorough data preparation in the overall data analysis pipeline and its impact on the quality of the final outcomes.  **4. Enhanced Problem-Solving and Analytical Skills**  Working on complex healthcare datasets with numerous variables and potential biases sharpened my problem-solving and analytical skills. I learned to navigate these challenges by applying innovative data imputation methods and advanced algorithms. This experience improved my ability to handle real-world data complexities and derive actionable insights.  **5. Collaboration and Professional Growth**  The internship provided valuable opportunities for collaboration and professional development. Interacting with my mentor and team members at TCS iON taught me the importance of effective communication and teamwork in achieving project goals. Their feedback and guidance were instrumental in refining my skills. Additionally, applying theoretical knowledge to practical scenarios bridged the gap between academic learning and professional application, preparing me for future career endeavors in data science and healthcare analytics. |
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