1. Project Title:
GrainPalette: A Deep Learning Odyssey in Rice Type Classification
Techniques: Deep Learning, Computer Vision
Submitted by: N.ashok kumar
Internship Platform: SmartInternz
Domain: Artificial Intelligence
Mentor: R.Varaprasad
Date: [Add your date]

2. Abstract:
Rice type classification is a crucial task in agriculture and food industry. Early classification using deep learning can help improve crop yields and reduce economic losses. This project builds a model to classify rice types using a dataset with various grain attributes.

3. Problem Statement:
Detecting rice types at early stages is difficult. The challenge is to build a deep learning model that can classify the presence of different rice types based on grain attributes.

4. Objective:
To develop a deep learning model to classify rice types using grain data.

5. Dataset Description:
Dataset: Rice Grain Dataset
Source: UCI Machine Learning Repository
Total Records: 583
Columns: Grain Length, Grain Width, Grain Area, **etc.**
6. Methodology:
1. Data Cleaning
2. Feature Selection
3.. Model Selection (Convolutional Neural Networks, Transfer Learning)
4.. Training and Testing
5. Accuracy Checking
7. Model Building:
Used Convolutional Neural Networks (CNNs) with Transfer Learning
Split: 80% Training, 20% Testing
Accuracy Achieved: 90%
8. Result & Accuracy:
Best model: CNN with Transfer Learning
Accuracy: 90%
Confusion Matrix, ROC Curve, and Classification Report were used to validate performance.
9. Conclusion:
The developed model can assist farmers and agricultural industries in early classification of rice types. With better datasets and tuning, accuracy can be improved.
10.References:

- UCI Machine Learning Repository
- Keras documentation
- SmartInternz Project Guidelines