Model Development Phase

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Team ID	SWTID1749876754
Project Title	SynapseScan: AI Driven Classification of Ovarian Cancer Variants
Maximum Marks	6 Marks

Model Selection Report

In the forthcoming Model Selection Report, various models will be outlined, detailing their descriptions, hyperparameters, and performance metrics, including Accuracy or F1 Score. This comprehensive report will provide insights into the chosen models and their effectiveness.

Model	Description	Hyperparameters	Performance Metric (e.g., Accuracy, F1 Score)
Inception V3 + Attention + Fine-tuning	Deep convolutional neural network with Inception architecture enhanced with attention mechanisms and fine-tuned on target dataset. Combines feature	Batch Size = 32, Img Size = (224, 224), Train Size = 0.8, Validation Size = 0.1, Test Size = 0.1, RandomOverSampler(random_state=42), num_heads = 8, key_dim = 2048, GaussianNoise(0.25), Dense(512, activation='relu'), Dropout(0.25), epochs = 20, patience = 5	Accuracy score = 93.84%

	extraction capabilities of InceptionV3 with attention-based focus on relevant image regions, optimized through transfer learning for improved classification performance.		
Inception V3 + Attention	Pre-trained InceptionV3 architecture integrated with attention mechanisms without fine-tuning. Leverages powerful feature extraction from ImageNet pre-training while incorporating attention to focus on discriminative image regions for classification tasks.	Batch Size = 32, Img Size = (224, 224), Train Size = 0.8, Validation Size = 0.1, Test Size = 0.1, RandomOverSampler(random_state=42), num_heads = 8, key_dim = 2048, GaussianNoise(0.25), Dense(512, activation='relu'), Dropout(0.25), epochs = 20, patience = 5	Accuracy score = 77.34%
MobileNet + Fine-tuning	Lightweight convolutional neural network designed for mobile and embedded applications, fine-tuned on target dataset. Utilizes depthwise separable convolutions for	Img Size = (160, 160), Batch Size = 64, Learning Rate = 0.0005, Dropout Rate = 0.2, Dense Units = 256, epochs = 25, Trainable Layers = 50	Accuracy score = 36.21%

	efficient computation while maintaining competitive accuracy through transfer learning optimization.		