**Table 2. Statistical Analysis of Model Performance**

|  |  |  |
| --- | --- | --- |
| **Dataset** | **Model** | **p-value (vs. Proposed Model)** |
| **PDAD** | Proposed Model | - |
| CNN-Based Model | p < 0.01 |
| SVM with PCA | p < 0.01 |
| **Alzheimer’s** | Proposed Model | - |
| ResNet-50 | p < 0.01 |
| RF | p < 0.01 |
| **ADNI** | Proposed Model | - |
| VGG-16 | p < 0.01 |
| k-NN | p < 0.01 |
| **OASIS** | Proposed Model | - |
| DenseNet-121 | p < 0.01 |
| XGBoost | p < 0.01 |