Synopsis

1. Project Title:
Brain Tumor Detection and Classification using PSO

2. Problem Statement:
Design and implement a deep learning-based system to detect brain tumors from MRI scans with high accuracy and efficiency. The system should classify MRI images into tumor and non-tumor categories, and also which type of tumor is enabling early diagnosis and improved treatment planning.

3. Objective:
This project aims to develop an automated system for accurate brain tumor detection using MRI scans. The system will classify MRI images into tumor and non-tumor categories by leveraging deep learning techniques, particularly Convolutional Neural Networks (CNN).

4.Proposed Solution:
The proposed solution involves using Particle Swarm Optimization (PSO) to optimize the feature extraction and classification processes in an image-based neural network model. MRI images of the brain will be pre-processed, followed by segmentation using PSO, and classification will be performed using a dataset from Kaggle.

5. Expected Outcome:
The expected outcome is the development of an automated system that can accurately detect and classify brain tumors from MRI images with high precision and efficiency, reducing the reliance on manual interpretation and improving the overall diagnostic process.

Student's Signature

Supervisor's Signature