## Literature Review  
  
### Artificial Intelligence in Healthcare Diagnostics  
  
The application of artificial intelligence (AI) and machine learning (ML) techniques in healthcare diagnostics has been a significant area of research, offering promising advancements in accuracy, efficiency, and early detection of various diseases. The integration of AI methods in fault diagnosis, particularly in automobile engines and medical imaging, showcases the technology's versatility and potential in enhancing diagnostic processes across different fields.  
  
#### Engine Fault Diagnosis  
  
Research on the application of AI methods in automobile engine fault diagnosis has highlighted the effectiveness of Cross Validation-Support Vector Machine (CV-SVM) and Particle Swarm Optimization-Probabilistic Neural Network (PSO-PNN) methods. These techniques utilize vibration acceleration signals as diagnostic parameters, offering faster and more stable diagnosis results, thereby facilitating timely discovery and repair of faults (© 2021 IOP Publishing Ltd). The comparative analysis of CV-SVM and PSO-PNN methods illustrates the importance of optimizing algorithm combinations based on the specific requirements of fault diagnosis tasks.  
  
#### Brain Tumor Classification  
  
In the realm of medical diagnostics, AI's impact is profoundly illustrated through the development of a novel brain tumor classification model that leverages deep feature fusion and machine learning classifiers. This model, trained and evaluated on a sizable dataset of Magnetic Resonance Images (MRIs), achieved a remarkable accuracy of 99.7%, showcasing the potential of AI in clinical settings for the accurate classification of brain tumors (© 2022 Hareem Kibriya et al.). The utilization of deep CNN features fused from multiple architectures highlights the importance of robust feature extraction in improving classification performance.  
  
### AI in Perinatal and Pulmonary Health  
  
AI methodologies have also found applications in perinatal health predictors, offering novel approaches for prediction modeling, diagnosis, and monitoring. The use of machine learning to predict conditions like preterm birth and preeclampsia demonstrates AI's potential in improving prenatal care and outcomes (© The Author(s) 2021). Similarly, automated pulmonary nodule classification and detection utilizing deep learning architectures indicate significant advancements in lung cancer diagnostics, thereby enhancing early detection and treatment (© 2022 IEEE).  
  
### Stress Assessment and Vestibular Disorders  
  
The development of machine learning models for stress assessment among pregnant women using heart rate variability and salivary cortisol presents an innovative approach to managing prenatal health (© 2022 Cao et al.). Additionally, the application of machine learning in classifying common vestibular disorders emphasizes AI's role in neuro-