


CERTIFICATE

This is to certify that the thesis entitled “**A Framework for Developing an Enhanced Convolutional Neural Network-Based Ensemble Learning Model for Alzheimer's Disease Classification Using MRI Brain Images**” submitted to the Avinashilingam Institute for Home Science and Higher Education for Woman, Coimbatore, for the award of the degree of **Doctor of Philosophy in Computer Science**, is a record of original research work done by **S. Chithra (18PHCSP007)**, during the period of her study in the Department of Computer Science, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, under my supervision and guidance and the thesis has not formed the basis for the award of any Degree / Diploma / Associateship / Fellowship or Seminar title to any candidate of any University.


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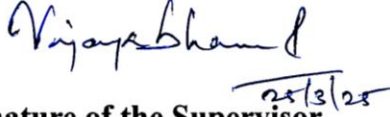
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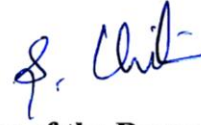
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DECLARATION

I hereby declare that the thesis titled “**A Framework for Developing an Enhanced Convolutional Neural Network-Based Ensemble Learning Model for Alzheimer's Disease Classification Using MRI Brain Images**” is the result of investigations carried out by me in the Department of Computer Science, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, under the supervision and guidance of **Dr. R.Vijayabhanu**, Associate Professor, Department of Computer Science, Avinashilingam Institute for Home Science and Higher Education for Woman, Coimbatore, and that it has not been submitted for the award of any Degree / Diploma / Associateship / Fellowship or similar title of any University or Institute.



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ACRONYMS

AD	Alzheimer's Disease
ADNI	Alzheimer's Disease NeuroImaging Initiative
AFHI	Adaptive Filter Hampel Identifier
BAGGING	Bootstrap Aggregating
CN	Cognitively Normal
CNN	Convolutional Neural Network
CT	Computer Tomography
DL	Deep Learning
DT	Decision Tree
DWT	Discrete Wavelet Transform
ELM	Extreme Learning Model
GANs	Generative Adversarial Networks
GLCM	Gray-Level Co-occurrence Matrix
GLDM	Gray Level Dependence Matrix
GLRLM	Gray Level Run- Length Matrix
KNN	K- Nearest Neighbour
LH,HH	High Pass
LL, HL	Low Pass
LRN	Local Response Normalization
LSTM	Long Short-Term Memory

MAE	Mean Absolute Error
MCI	Mild Cognitive Impairment
ML	Machine Learning
MRI	Magnetic Resonance Imaging
NEAT	Neuro Evolution of Augmenting Topologies
NN	Neural Network
	Organization for the Advancement of Information
OASIS	Standards
PET	Positron Emission Tomography
PSNR	Peak Signal-to-Noise Ratio
ReLU	Rectified Linear Unit
RG	Region Growing
RMSE	Root Mean Squared Error
RNN	Recurrent Neural Network
	Single Photon Emission Computerized
SPECT	Tomography
SSIM	Structural Similarity Index Measure
SVM	Support Vector Machine