

Supplementary Table 2. Detailed hyperparameters for the imaging and clinical models

Hyperparameter	Value
Imaging data model (CBAM-ResNeXt50)	
Batch size	8
Optimizer	RAdam
Initial learning rate	0.001
Learning rate scheduler	Cosine annealing scheduler with warm restarts
Fraction of initial learning rate	0.5
Steps to decay over	30
Dropout	0.1
Loss function	Binary focal loss
Output activation function	Sigmoid
Image augmentation	RandAugment
Number of operations	1
Magnitude	0.1
Clinical data model (FCN)	
Batch size	32
Hidden layers	8-8-8
Activation function	ELU
Optimizer	Adam
Initial learning rate	0.001
Batch normalization	True
Dropout	0.5
Loss function	Binary focal loss
Output activation function	Sigmoid

List of hyperparameters used in each model.

CBAM, Convolutional Block Attention Module; RAdam, Rectified Adam; FCN, fully connected neural network; ELU, Exponential Linear Unit.

Supplementary Table 3. Optimized weights of each modality

Modality	Weight
Clinical	0.707
b1000	0.055
ADC	0.012
FLAIR	0.226

The weights given to each single modality model.

b1000, b-value of 1,000 s/mm²; ADC, apparent diffusion coefficient; FLAIR, fluid-attenuated inversion recovery.