

# Radiogenomic classification of glioblastoma using multimodal 3D MRI

## 3D cropped-mask cascaded results

**Table 1: Single model (ResNet)**

Axis	Model	Classification	
		AUC	Accuracy
AXIAL (axis 1)	ResNet 34 (r=10)	0.641 + 0.187	0.620 + 0.150
	ResNet18 (r=10)	0.553 + 0.062	0.510 + 0.047
CORONAL (axis 2)	ResNet34 (r=6)	0.586 + 0.121	0.574 + 0.090
	ResNet18 (r=8)	0.640 + 0.190	0.608 + 0.182
SAGGITAL (axis 3)	ResNet34 (r=6)	0.5755 + 0.183	0.551 + 0.150
	ResNet18 (r=0)	0.582 + 0.147	0.576 + 0.118

**Table 2: Single model (EfficientNet)**

Axis	Model	Classification	
		AUC	Accuracy
AXIAL (axis 1)	EffNet B0 (r=8)	0.532 + 0.038	0.522 + 0.046
	EffNet B3 (r=4)	0.4942 + 0.034	0.506 + 0.021
CORONAL (axis 2)	EffNet B7 (r=4)	0.4455 + 0.058	0.5099 + 0.017
	EffNet B0(r=10)	0.546 + 0.052	0.493 + 0.019
	EffNet B3(r=0)	0.521 + 0.044	0.513 + 0.018
SAGGITAL (axis 3)	EffNet B7 (r=0)	0.475 + 0.055	0.511 + 0.017
	EffNet B0 (r=0)	0.490 + 0.086	0.511 + 0.018
	EffNet B3 (r=8)	0.505 + 0.054	0.511 + 0.017
	EffNet B7 (r=10)	0.509 + 0.060	0.488 + 0.017

**Table 3: Model ensembles**

Axis	Model	Classification	
		AUC	Accuracy
AXIAL (axis 1)	EffNet B3 + ResNet34 (r=4)	0.713 + 0.160	0.662 + 0.148
	ResNet18 + ResNet34 (r=8)	0.736 + 0.149	0.686 + 0.121
	EffB3 + ResNet18 (r=4)	0.6924 + 0.169	0.653 + 0.140
CORONAL (axis 2)	EffNet B3 + ResNet34 (r=10)	0.637 + 0.177	0.608 + 0.136
	ResNet18 + ResNet34 (r=8)	0.7219 + 0.174	0.693 + 0.140
	EffNet B3 + ResNet18 (r=6)	0.680 + 0.199	0.637 + 0.172
SAGGITAL (axis 3)	EffNet B3 + ResNet34 (r=8)	0.715 + 0.146	0.671 + 0.104
	ResNet18 + ResNet34 (r=5)	0.707 + 0.202	0.684 + 0.154
	EffNet B3 + ResNet18 (r=6)	0.6299 + 0.189	0.609 + 0.135

**Table 4: 3-axis ensembles**

Ensemble	AUC	Accuracy
ResNet18	0.711 + 0.198	0.665 + 0.171
ResNet34	0.721 + 0.231	0.700 + 0.205