

#RSNA21: Brain Tumour AI Challenge Winners



During RSNA 2021 on 29 November 2021, RSNA recognised the winners of a two-part brain tumour AI challenge at Chicago's McCormick Place. RSNA partnered with the Medical Image Computing and Computer Assisted Interventions Society (MICCAI) and the American Society of Neuroradiology (ASNR) to organise this competition.

For the first challenge, researchers built models to accurately segment and classify brain tumours in clinically acquired multi-parametric magnetic resonance imaging (mpMRI) scans. Over 1,200 participants across five continents registered for the Brain Tumor Segmentation challenge, which has occurred annually since 2012. This year, the challenge was conducted with MICCAI and led by Spyridon Bakas, PhD, assistant professor in the Departments of Radiology and Pathology & Laboratory Medicine of the Perelman School of Medicine at the University of Pennsylvania in Philadelphia.

A second challenge task was introduced this year using the same dataset to predict the status of the radiogenomic biomarker, MGMT promoter methylation, in biopsied tumour tissue. The biomarker associated with gliomas predicts patient survival and the response to the oncology drug temozolomide. Kaggle hosted the competition, which attracted over 1,500 participating teams.

The dataset, shared by both challenges, included brain tumours from over 2,000 patients from 37 institutions. These featured four distinct structural mpMRI scans for each patient, manually annotated with detailed segmentations from over 60 clinical expert volunteers.

A \$60,000 prize was contributed by RSNA, Intel Corporation, and Neosoma. Prize-winning teams included:

Segmentation Task

- KAIST-MRI-Lab
- deepX
- mfnv
- NVAUTO
- FightBrainTumor
- Future-Processing-Healthcare
- NGresearch
- NPU_PITT

Radiogenomic Classification Task

- Tunisia.ai
- Minh Phan
- Cedric Soares
- Leaky Folds
- random
- Train4Ever
- Igor Lashkov
- ArturHug

Source: [RSNA](#)

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