

# RSNA Brain Tumor AI Challenge (2021)

From the challenge website: <https://www.rsna.org/education/ai-resources-and-training/ai-image-challenge/brain-tumor-ai-challenge-2021>

This competition, organized in partnership with the American Society of Neuroradiology (ASNR) and the Medical Image Computing and Computer Assisted Interventions (MICCAI) Society, focused on brain tumor detection and classification, utilizing multi-parametric magnetic resonance imaging (mpMRI) scans. It was the culmination of a decade of Brain Tumor Segmentation (BraTS) challenges and created a large and diverse dataset including detailed annotations and an important associated biomarker.

# Overview

The Brain Tumor AI Challenge comprised two tasks related to brain tumor detection and classification. Participants could choose to compete in one or both. Both challenge tasks launched in July of 2021, with final submissions due in October and validated results announced in November. A challenge recognition event was held at the RSNA annual meeting on November 29, 2021.

## **Task 1: Brain Tumor Segmentation**

Participants built models to produce detailed segmentations of brain tumor sub-regions. Such segmentations could enable improvements in computer-assisted surgery, radiotherapy guidance and disease progression monitoring.

## **Task 2: Brain Tumor Radiogenomic Classification**

Participants built models that use mpMRI imaging to predict MGMT promoter methylation status, an important biomarker for treatment of brain tumors. Such radiogenomic models could improve the efficiency and accuracy of diagnosis, prognosis and treatment planning for patients with glioblastoma.