

# Radboud University Builds Machine Learning Solutions for Medical Imaging on AWS

## Industry Challenge

Overwhelmed hospitals need fast, accurate medical imaging to quickly diagnose and treat patients affected by the COVID-19 pandemic. Many facilities have few radiologists on staff, and heavy workloads contribute to burnout.

*"We needed a scalable solution, and that is why we reached out to AWS. We migrated our entire system to AWS in only 2 months." - Bram van Ginneken, Professor of Medical Image Analysis, Radboud University Medical Center*

## Radboud University's Solution

"What we need in the research community is an integrated global infrastructure to develop machine learning solutions," says Bram van Ginneken, professor of medical image analysis at [Radboud University Medical Center](#). Van Ginneken oversees Grand Challenge, an online platform for end-to-end development of machine learning solutions in biomedical imaging.

Van Ginneken's team developed CO-RADS, a fast and accurate scoring system to diagnose large numbers of new patients using CT lung scans, leading to an increase in Grand Challenge platform users. To support this demand, Radboud University migrated the Grand Challenge platform entirely to Amazon Web Services (AWS). The platform uses several AWS services to create a scalable environment to build, test, and deploy medical imaging algorithms. [Amazon Simple Storage Service](#) (Amazon S3), with accelerated transfer, gathers data from sites around the world, and [Amazon CloudFront](#) loads scans into a simple-to-use browser at a latency of less than 10 ms.

## Benefits of Using AWS

Secure, scalable, and freely available, AWS-powered Grand Challenge provides the tools necessary to build, train, and deploy machine learning models at scale for critical clinical applications. To advance research on the virus causing the COVID-19 pandemic, Grand Challenge used the platform's new features to launch a classification challenge encouraging users to develop and submit algorithms designed to better classify lung abnormalities. "We will do this challenge with close guidance from AWS," says van Ginneken. "And we call upon the machine learning community to jointly develop solutions that could help fight this current crisis."

Learn more about AWS for Healthcare: [aws.amazon.com/health](https://aws.amazon.com/health).

Watch the video: [AWS re:Invent 2020 - Reinventing medical imaging with machine learning on AWS](#)



## Radboud University Medical Center

Radboud University Medical Center is the teaching hospital for Radboud University, a public research institution located in Nijmegen, the Netherlands.

