

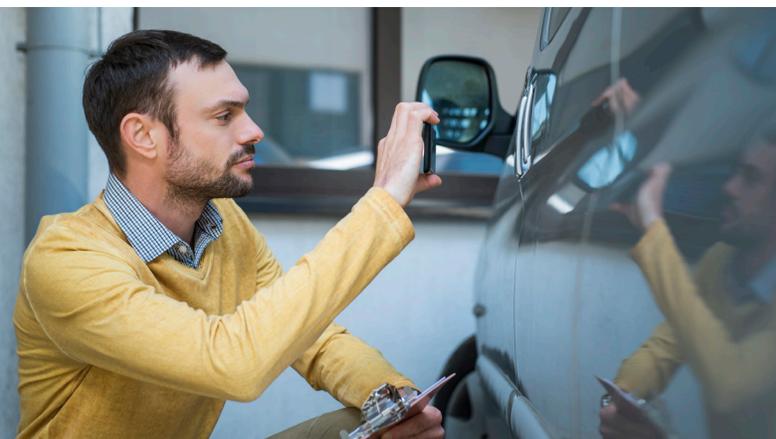


# Innovating with AWS cloud

We've anticipated it for years, and now it's becoming reality: Emerging technologies like machine learning (ML) are finally able to emulate and augment the power of the human brain. But many organizations lack the qualified staff, tools, and frameworks to systematically implement these innovative solutions.

To help organizations unlock business value, major cloud technology companies—like Amazon Web Services (AWS)—are making investments to enable the adoption of ML. Through scalable and high-performance infrastructure services and machine learning algorithms, AWS enables data scientists and developers to quickly and easily build, train, and deploy machine learning models. Amazon SageMaker can help you accomplish a large array of machine learning workflows.

Using machine learning built on AWS' scalable cloud-based platform—coupled with APIs and services—Deloitte is helping clients resolve business issues and discover new insights.



## A Powerful Picture

Denmark's second largest insurance company, Topdanmark, collaborated with Deloitte Denmark to develop and design an AI/ML capability that would map car damage to cost-to-repair based on image recognition. AWS was selected for its massive storage and compute power, specifically AWS EC2 with GPU and S3 storage. Utilizing the GPUs of AWS's p2/p3 instances, the ML model trained much faster than traditional CPU or on-prem deployments. The team trained the image translation algorithm to identify the damaged, outer components of a car solely from an image input.

# Separating Signal from Noise

As the innovation and technology landscape continues to accelerate at a rapid pace, the Department of Homeland Security Science and Technology Directorate (DHS S&T) is at the forefront of targeting the latest technology to advance its national security mission.

DHS S&T adopted Deloitte's solution for Horizon Scanning, Technology Scouting, and Market Analysis to extend the DHS S&T taxonomy of common terms into a broader ontology; including research, patents, news, and company recommendations. The solution takes advantage of multiple open and commercial data sources. It leverages natural language processing (NLP), data science, web automation, and trained curators to find, evaluate, extract, enrich, and publish short- and long-form content.



The solution deploys on AWS' Cloud, taking advantage of its high compute and scalable services, to generate relevant alerts and research for DHS S&T. The DHS S&T team leverages this information to develop specific reports on emerging technologies and start-ups in the marketplace in support of their DHS R&D investment.

The business world is still coming to terms with opportunities presented by the enormous amount of data pulsing through markets, individual businesses, and more. Conventional technology is not up to the task of extracting the full value of this mountain of data, but the promise of cognitive technology solutions is clear.

With continuous delivery of ML models, Deloitte will develop solutions to help solve many different types of problems on cloud-based technology. By applying a systematic approach to implementing these innovative solutions, organizations can recognize additional benefits. Through Deloitte's Cognitive Advantage market offering, Deloitte is helping organizations transform decision-making, work, and interactions through the use of insights, automation, and engagement capabilities. The offerings are tailored to be industry-specific and enabled by an integrated approach with a broad range of solution offerings including: shape strategy, manage data, deliver information, improve performance, optimize insights, amplify intelligence, build capabilities, and manage environments.

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