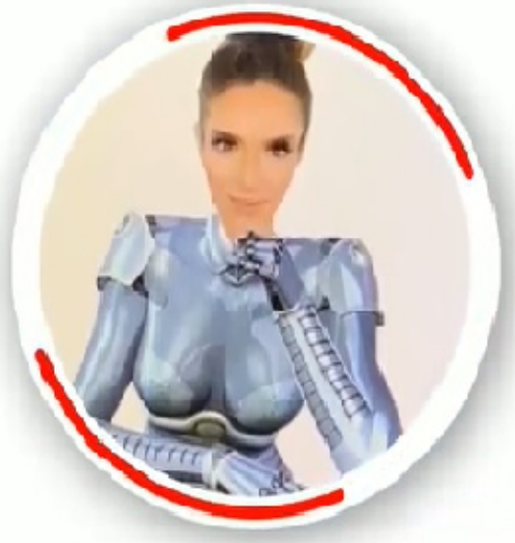
References Machine Learning and AI Uses Cases Detect Sales Trends



APPLANT

By Dr.KESKIN
August, 2021

CASE STUDY

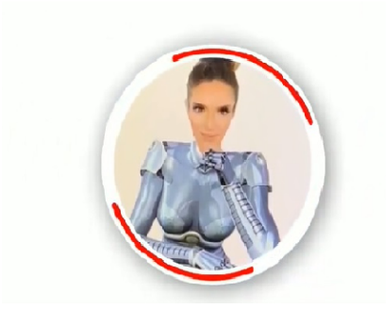
COMCAST

As a global technology and media company that connects millions of customers to personalized experiences, Comcast struggled with massive data, fragile data pipelines and poor data science collaboration. By using lastest technology - Data Lake and MLflow — they were able to build performant data pipelines for petabytes of data and easily manage the lifecycle of hundreds of models, creating a highly innovative, unique and award-winning viewer experience that leverages voice recognition and machine learning.

USE CASE: In the intensely competitive entertainment industry, there's no time to press the Pause button. Comcast realized they needed to modernize their entire approach to analytics from data ingest to the deployment of machine learning models that deliver new features to delight their customers.

SOLUTION AND BENEFITS: Armed with a unified approach to analytics, Comcast can now fast-forward into the future of AI-powered entertainment — keeping viewers engaged and delighted with competition-beating customer experiences.

- **EMMY-WINNING VIEWER EXPERIENCE:** Comcast created a highly innovative and award-winning viewer experience with intelligent voice commands that boost engagement.
- **REDUCED COMPUTE COSTS BY 10X:** Comcast optimized data ingestion, replacing 640 machines with 64 — while improving performance. Teams can spend more time on analytics and less time on infrastructure management.
- **HIGHER DATA SCIENCE PRODUCTIVITY:** The upgrades and use of Data lake fostered global collaboration among data scientists by enabling different programming languages through a single interactive workspace. Data lake also enabled the data team to use data at any point within the data pipeline, allowing them to act much quicker in building and training new models.
- **FASTER MODEL DEPLOYMENT:** By modernizing, Comcast reduced deployment times from weeks to minutes as operations teams deployed models on disparate platforms.



CASE STUDY

REGENERON

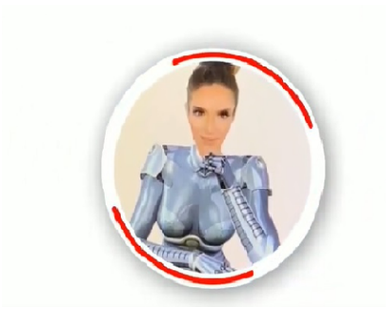
Regeneron's mission is to tap into the power of genomic data to bring new medicines to patients in need. Yet, transforming this data into life-changing discovery and targeted treatments has never been more challenging. With poor processing performance and scalability limitations, their data teams lacked what they needed to analyze petabytes of genomic and clinical data.

USE CASE: More than 95% of all experimental medicines that are currently in the drug development pipeline are expected to fail. To improve these efforts, the Regeneron Genetics Center built one of the most comprehensive genetics databases by pairing the sequenced exomes and electronic health records of more than 400,000 people. However, they faced numerous challenges analyzing this massive set of data:

- Genomic and clinical data is highly decentralized, making it very difficult to analyze and train models against their entire 10TB data set.
- Difficult and costly to scale their legacy architecture to support analytics on over 80 billion data points.
- Data teams were spending days just trying to ETL the data so that it can be used for analytics.

SOLUTION AND BENEFITS: Regeneron with a Unified Data Analytics Platform running on Amazon Web Services that simplifies operations and accelerates drug discovery through improved data science productivity. This is empowering them to analyze the data in new ways that were previously impossible.

- **ACCELERATED DRUG TARGET IDENTIFICATION:** Reduced the time it takes data scientists and computational biologists to run queries on their entire data set from 30 minutes down to 3 seconds — a 600x improvement!
- **INCREASED PRODUCTIVITY:** Improved collaboration, automated DevOps and accelerated pipelines (ETL in 2 days vs. 3 weeks) have enabled their teams to support a broader range of studies.



CASE STUDY

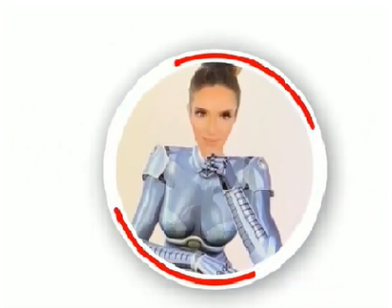
Nationwide®

The explosive growth in data availability and increasing market competition are challenging insurance providers to provide better pricing to their customers. With hundreds of millions of insurance records to analyze for downstream ML, Nationwide realized their legacy batch analysis process was slow and inaccurate, providing limited insight to predict the frequency and severity of claims.

USE CASE: The key to providing accurate insurance pricing lies in leveraging information from insurance claims. However, data challenges were difficult as they had to analyze insurance records that were volatile as claims were infrequent and unpredictable — resulting in inaccurate pricing.

SOLUTION AND BENEFITS: Nationwide leverages its own artificial intelligence data analytics platform to manage the entire analytics process from data ingestion to the deployment of deep learning models. The fully managed platform has simplified IT operations and unlocked new data-driven opportunities for their data science teams.

- **DATA PROCESSING AT SCALE:** Improved runtime of their entire data pipeline from 34 hours to less than 4 hours, a 9x performance gain.
- **FASTER FEATURIZATION:** Data engineering is able to identify features 15x faster — from 5 hours to around 20 minutes.
- **FASTER MODEL TRAINING:** Reduced training times by 50%, enabling faster time-to-market of new models.
- **IMPROVED MODEL SCORING:** Accelerated model scoring from 3 hours to less than 5 minutes, a 60x improvement.



CASE STUDY

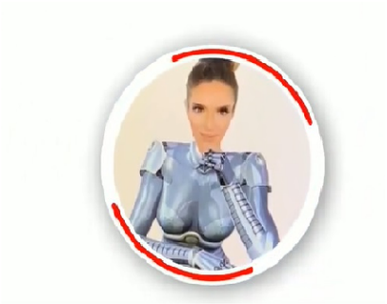
CONDÉ NAST

Condé Nast is one of the world's leading media companies, counting some of the most iconic magazine titles in its portfolio, including The New Yorker, Wired and Vogue. The company uses data to reach over 1 billion people in print, online, video and social media.

USE CASE: As a leading media publisher, Condé Nast manages over 20 brands in their portfolio. On a monthly basis, their web properties garner 100 million-plus visits and 800 million-plus page views, producing a tremendous amount of data. The data team is focused on improving user engagement by using machine learning to provide personalized content recommendations and targeted ads.

SOLUTION AND BENEFITS: Condé Nast achieved its goal with a fully managed cloud platform that simplifies operations, delivers superior performance and enables data science innovation.

- **IMPROVED CUSTOMER ENGAGEMENT:** With an improved data pipeline, Condé Nast can make better, faster and more accurate content recommendations, improving the user experience.
- **BUILT FOR SCALE:** Data sets can no longer outgrow Condé Nast's capacity to process and glean insights.
- **MORE MODELS IN PRODUCTION:** With MLflow, Condé Nast's data science teams can innovate their products faster. They have deployed over 1,200 models in production.



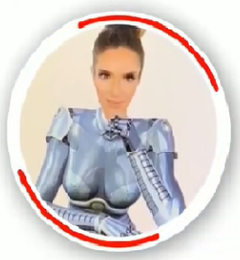
CASE STUDY

SHOWTIME® is a premium television network and streaming service, featuring award-winning original series and original limited series like “Shameless,” “Homeland,” “Billions,” “The Chi,” “Ray Donovan,” “SMILF,” “The Affair,” “Patrick Melrose,” “Our Cartoon President,” “Twin Peaks” and more.

USE CASE: The Data Strategy team at SHOWTIME is focused on democratizing data and analytics across the organization. They collect huge volumes of subscriber data (e.g., shows watched, time of day, devices used, subscription history, etc.) and use machine learning to predict subscriber behavior and improve scheduling and programming.

SOLUTION AND BENEFITS: HOWTIME achieved to democratize data and machine learning across the organization, creating a more data-driven culture.

- **6X FASTER PIPELINES:** Data pipelines that took over 24 hours are now run in less than 4 hours, enabling teams to make decisions faster.
- **REMOVING INFRASTRUCTURE COMPLEXITY:** Fully managed platform in the cloud with automated cluster management allows the data science team to focus on machine learning rather than hardware configurations, provisioning clusters, debugging, etc.
- **INNOVATING THE SUBSCRIBER EXPERIENCE:** Improved data science collaboration and productivity has reduced time-to-market for new models and features. Teams can experiment faster, leading to a better, more personalized experience for subscribers.



CASE STUDY

Shell is a recognized pioneer in oil and gas exploration and production technology and is one of the world's leading oil and natural gas producers, gasoline and natural gas marketers and petrochemical manufacturers.

USE CASE: To maintain production, Shell stocks over 3,000 different spare parts across their global facilities. It's crucial the right parts are available at the right time to avoid outages, but equally important is not overstocking, which can be cost-prohibitive.

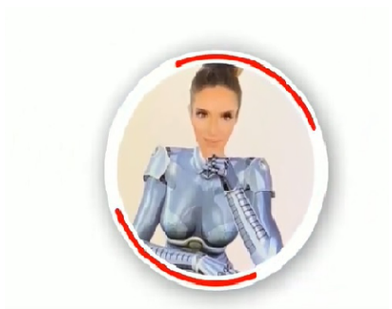
SOLUTION AND BENEFITS: Now Shell has a cloud-native unified analytics platform that helps with improved inventory and supply chain management.

- **PREDICTIVE MODELING:** Scalable predictive model is developed and deployed across more than 3,000 types of materials at 50-plus locations.

HISTORICAL ANALYSES: Each material model involves simulating 10,000 Markov Chain Monte Carlo iterations to capture historical distribution of issues.

MASSIVE PERFORMANCE GAINS: With a focus on improving performance, the data science team reduced the inventory analysis and prediction time to 45 minutes from 48 hours on a 50 node Apache Spark™ cluster on Databricks — a 32x performance gain.

REDUCED EXPENDITURES: Cost savings equivalent to millions of dollars per year.



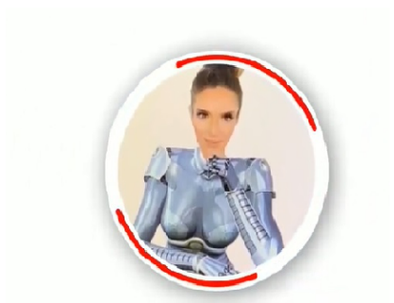
CASE STUDY

Riot Games' goal is to be the world's most player-focused gaming company. Founded in 2006 and based in LA, Riot Games is best known for the League of Legends game. Over 100 million gamers play every month.

USE CASE: Improving gaming experience through network performance monitoring and combating in-game abusive language.

SOLUTION AND BENEFITS: Riot Games achieved to improve the gaming experience of their players by providing scalable, fast analytics.

- **IMPROVED IN-GAME PURCHASE EXPERIENCE:** Able to rapidly build and productionize a recommendation engine that provides unique offers based on over 500B data points. Gamers can now more easily find the content they want.
- **REDUCED GAME LAG:** Built ML model that detects network issues in real time, enabling Riot Games to avoid outages before they adversely impact players.
- **FASTER ANALYTICS:** Increased processing performance of data preparation and exploration by 50% compared to EMR, significantly speeding up analyses.



CASE STUDY

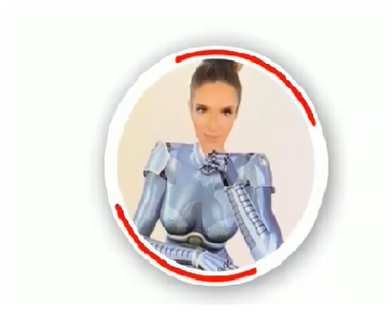
Quby

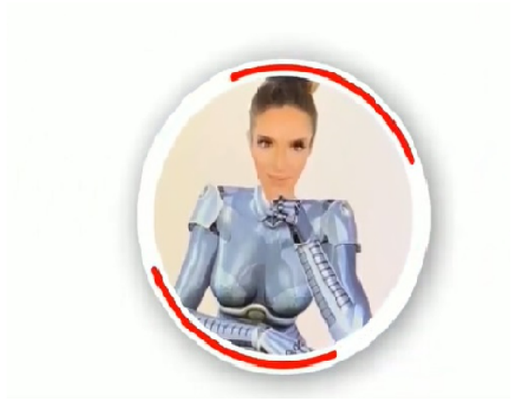
Quby is the technology company behind Toon, the smart energy management device that gives people control over their energy usage, their comfort, the security of their homes and much more. Quby's smart devices are in hundreds of thousands of homes across Europe. As such, they maintain Europe's largest energy data set, consisting of petabytes of IoT data, collected from sensors on appliances throughout the home. With this data, they are on a mission to help their customers live more comfortable lives while reducing energy consumption through personalized energy usage recommendations.

USE CASE: Personalized energy use recommendations: Leverage machine learning and IoT data to power their Waste Checker app, which provides personalized recommendations to reduce in-home energy consumption.

SOLUTION AND BENEFITS: Now, Quby has a Unified Data Analytics Platform that has fostered a scalable and collaborative environment across data science and engineering, allowing data teams to more quickly innovate and deliver ML-powered services to Quby's customers.

- **LOWERED COSTS:** Cost-saving features provided by Databricks (such as auto-scaling clusters and Spot instances) have helped Quby significantly reduce the operational costs of managing infrastructure, while still being able to process large amounts of data.
- **FASTER INNOVATION:** With their legacy architecture, moving from proof of concept to production took over 12 months. Now the same process takes less than eight weeks. This enables Quby's data teams to develop new ML-powered features for their customers much faster.
- **REDUCED ENERGY CONSUMPTION:** Through their Waste Checker app, Quby has identified over 67 million kilowatt hours of energy that can be saved by leveraging their personalized recommendations.





Thank you

For Machine Learning and Deep Learning Consultancy
Contact via
Applant.nl
keepgoing@applant.nl

Dr.Keskin
ellaburcu@applant.nl
0031 683952246
August 2021