
Data Science | ML | AI



iLabs

creative, refreshing, cutting edge



In the past, Artificial Intelligence was only R&D.
In the last years, this technology is present in almost
every industry and brings benefits to the businesses
that decided to accept it.

We help companies leverage AI to increase revenue



- By learning relationships from both structured and unstructured data, we help organizations to improve operational efficiency, enhance sales opportunities and accelerate potential in the competitive respective industries.
- By using predictive analytics techniques and developing AI strategy, with the data-driven decisions we transform organizations into strong future-oriented companies.
- We provide data scientists and visionaries who bring viewpoints from multiple disciplines including neuroscience, physics, engineering, computational biology, genomics and computer science.
- Our team helps solving life challenges in world's greatest sectors including healthcare, retail, finance, agriculture.

Our approach



Our AI capabilities



We have experience designing, implementing and automating learning and decision processes.

Data Structures



- Heuristic/Implicit Models
- Explicit Models
- Knowledge Graphs

Data Processing



- Behavioral Analysis
- Probabilistic Attribution
- Collaborative Filtering
- Time-series Prediction
- Named Entity Extraction
- Semantic Role Labeling
- Inference Engine

Decision Automation



- Markov Decision Processes
- Finite State Automation
- Rule based Triggers

Visualization



- Data Dashboards
- Data Simulation
- Search
- N-dimensional Reports

Our technology platforms

Machine Learning

Our team has expertise in time series forecasting, computer vision, and other statistical machine learning methods including deep learning. We engineer custom pipelines for feature extraction and modeling across a wide variety of data types (customer, device/sensor, images, etc.).

Natural Language Processing (NLP)

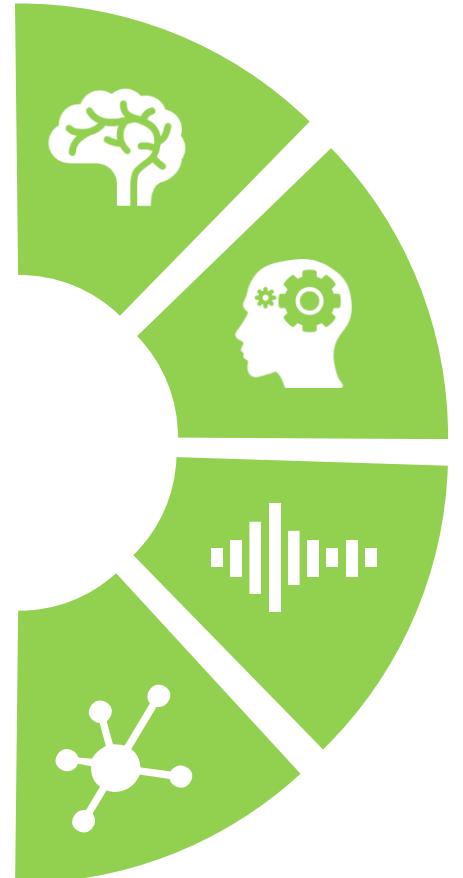
We use state-of-the-art methods to extract domain-specific entities and learn semantic relationships from unstructured text data (scientific literature, patents, product claims, etc.).

Audio and Video Analytics

We engineer audio video analytics pipelines that quantify human behavior and extract features and digital biomarkers to provide clinical decision support, with applications extending across multiple verticals.

Bioinformatics

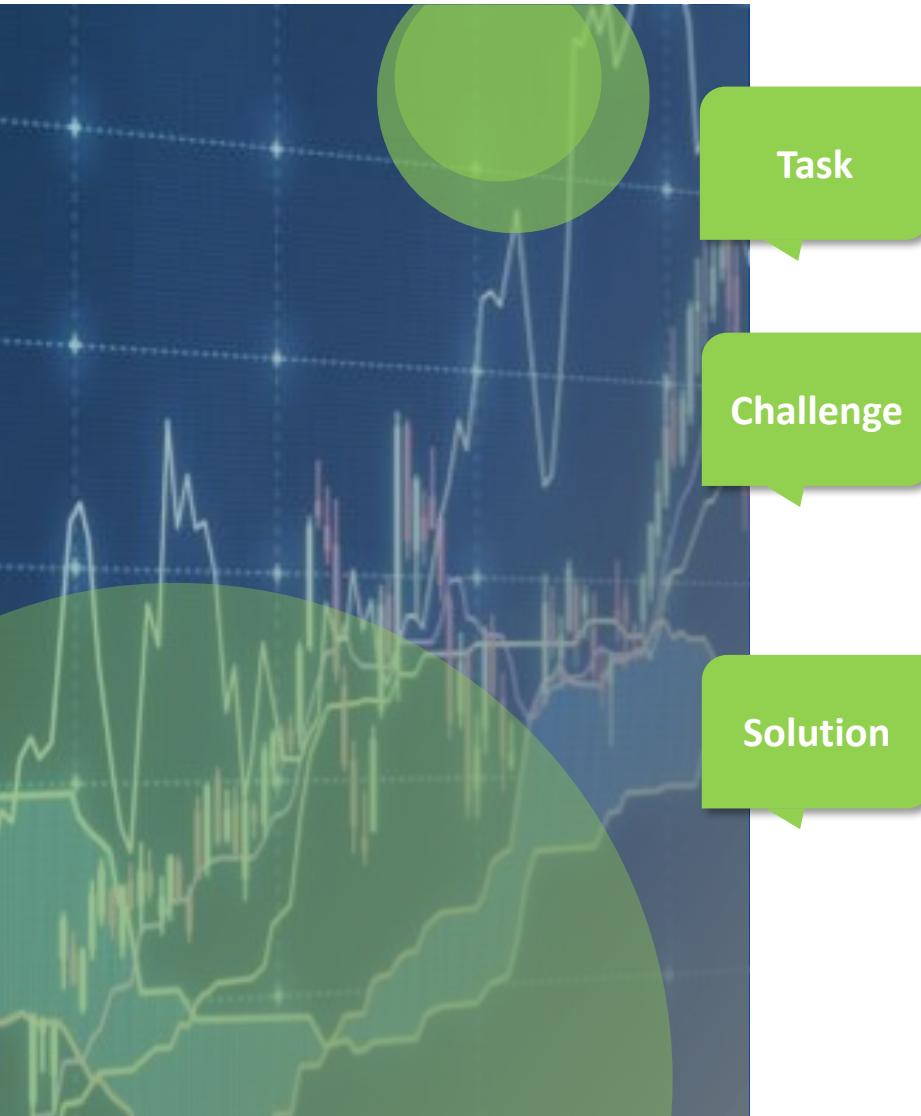
We are domain experts in computational biology with technical expertise in biomarker discovery, genomics / GWAS, mechanism of action (MOA), multi-omics, pathway studies, and proteomics.





AI solutions

NLP - Web Content

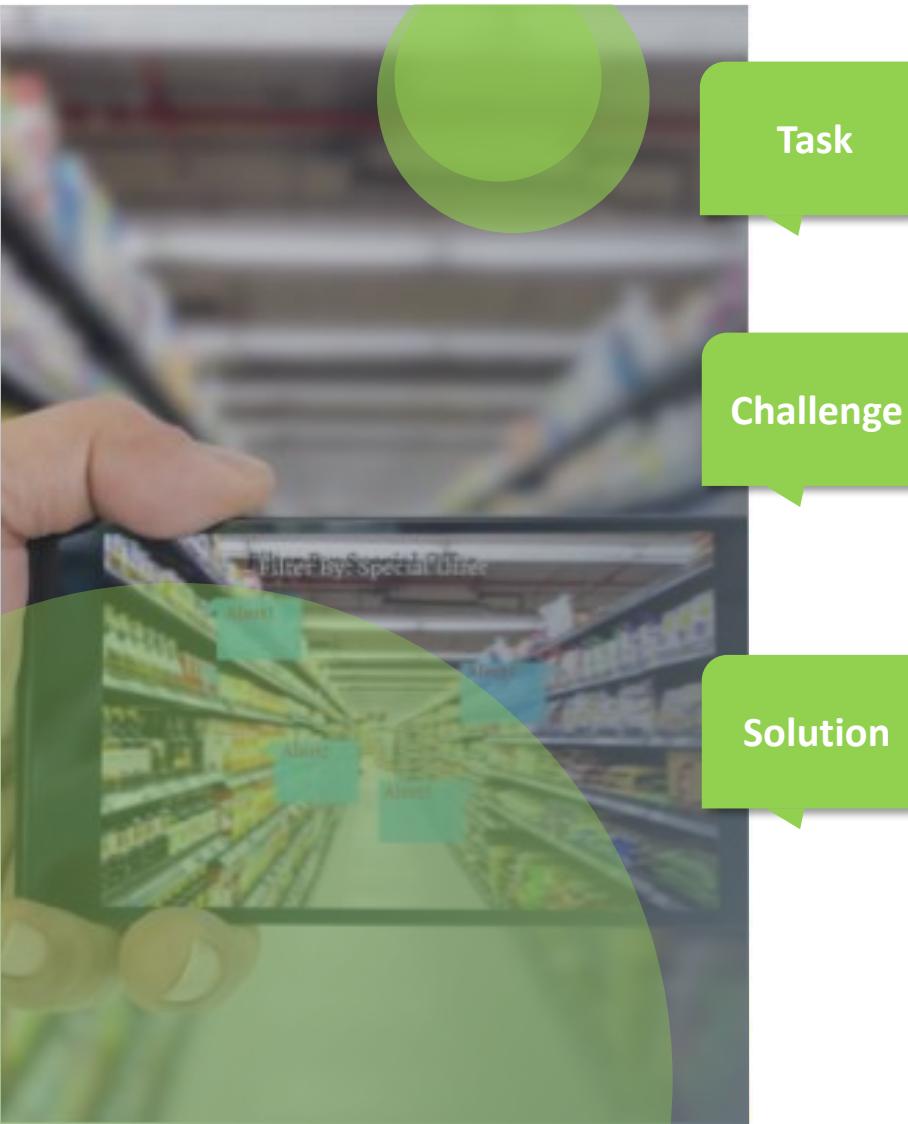


Automatically discover themes from 6 million web articles published daily.

Our client, a digital PR firm, needed to automate the discovery of concepts in new articles published to the web daily to share with their customers to drive real-time PR campaigns. Further, these 6 million articles needed to be processed within 1 hour.

We built data engineering pipelines to pre-process text strings to lemmatize and drop out stop words. Our team developed a specialized natural language processing (NLP) model to process, classify, and cluster web-based articles, based on primary purpose and content. We were able to extract the most common themes present across the full set of new articles. We optimized the performance and parallelized the pipeline to process 6 million articles daily within 1 hour.

Machine Learning - Marketing

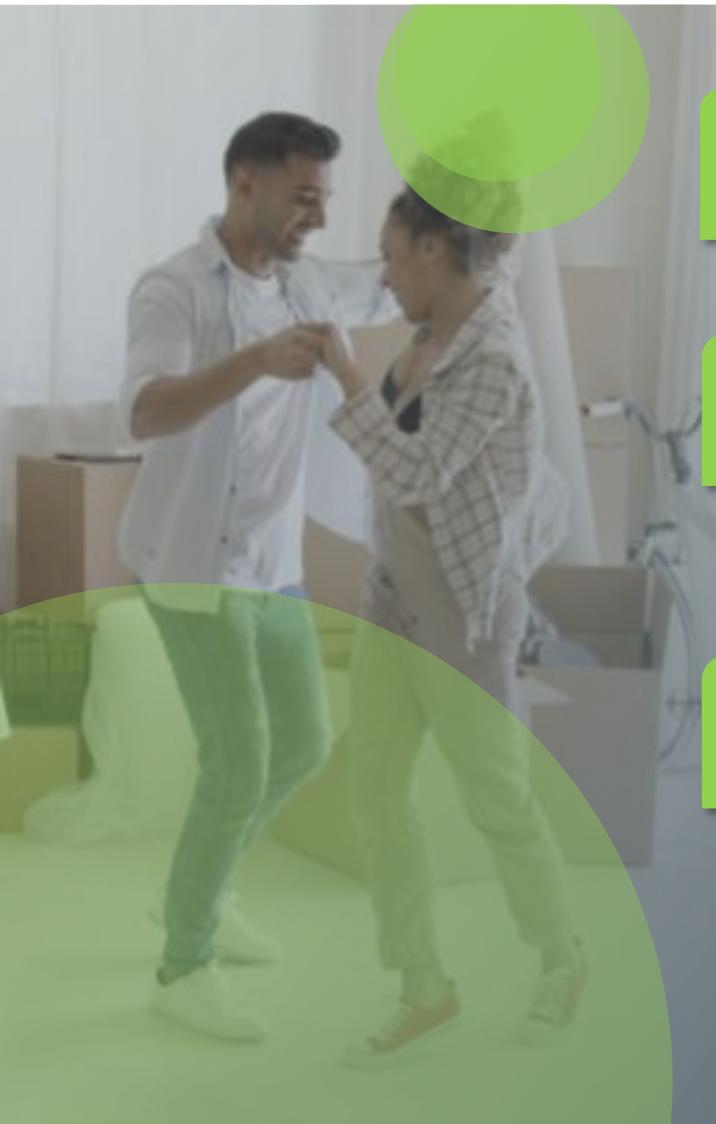


▼
Data science to recommend targeted CPG campaigns to maximize ROI and increase sales lift.

▼
Our client, a digital marketing platform, enables CPG brands to reach customers via retail locations. The brands need predictive insights on which campaigns are most likely to generate sales lift and/or ROI, based on past behavior.

▼
We aggregated point of sale data from 6,000+ locations over a three-year period to identify campaigns based on price discounts. Seasonal sales trends were modeled to identify true sales lift for the campaign. Campaign costs were estimated to generate a campaign ROI / margin. Ensemble machine learning methods were used to learn past campaign behavior to predict sales lift and ROI. Our client saw a 4x increase in sales leads from a major industry conference based on the newly introduced campaign insights.

Machine Learning - Sales



Task

Challenge

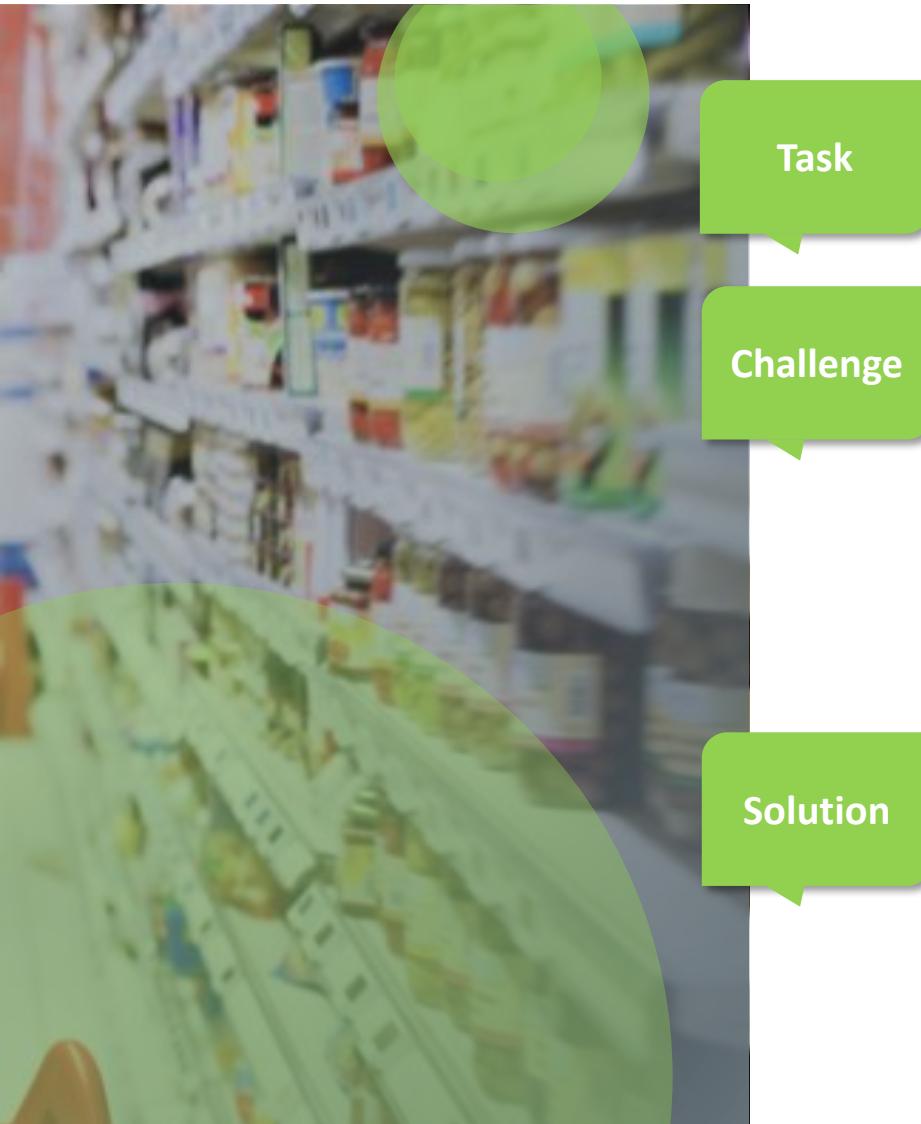
Solution

Develop predictive models to power the sales process.

Our client is a provider of hotel-inspired services for multifamily communities. When engaging with a new community, their sales team needed to focus and personalize their marketing efforts on the residents most likely to become customers. They needed a data-driven way to identify the residents most likely to become high revenue customers.

We aggregated multifamily community data and historical revenue. We employed data-science-driven clustering analysis to identify common traits of high revenue customers and trained a model to predict sales outcomes for new communities. Our analysis confirmed that users of our client's services were much more likely to re-sign the lease, conferring significant savings to multifamily community owners on churn, leading to an acceleration of sales.

Machine Learning - Products



Task

Challenge

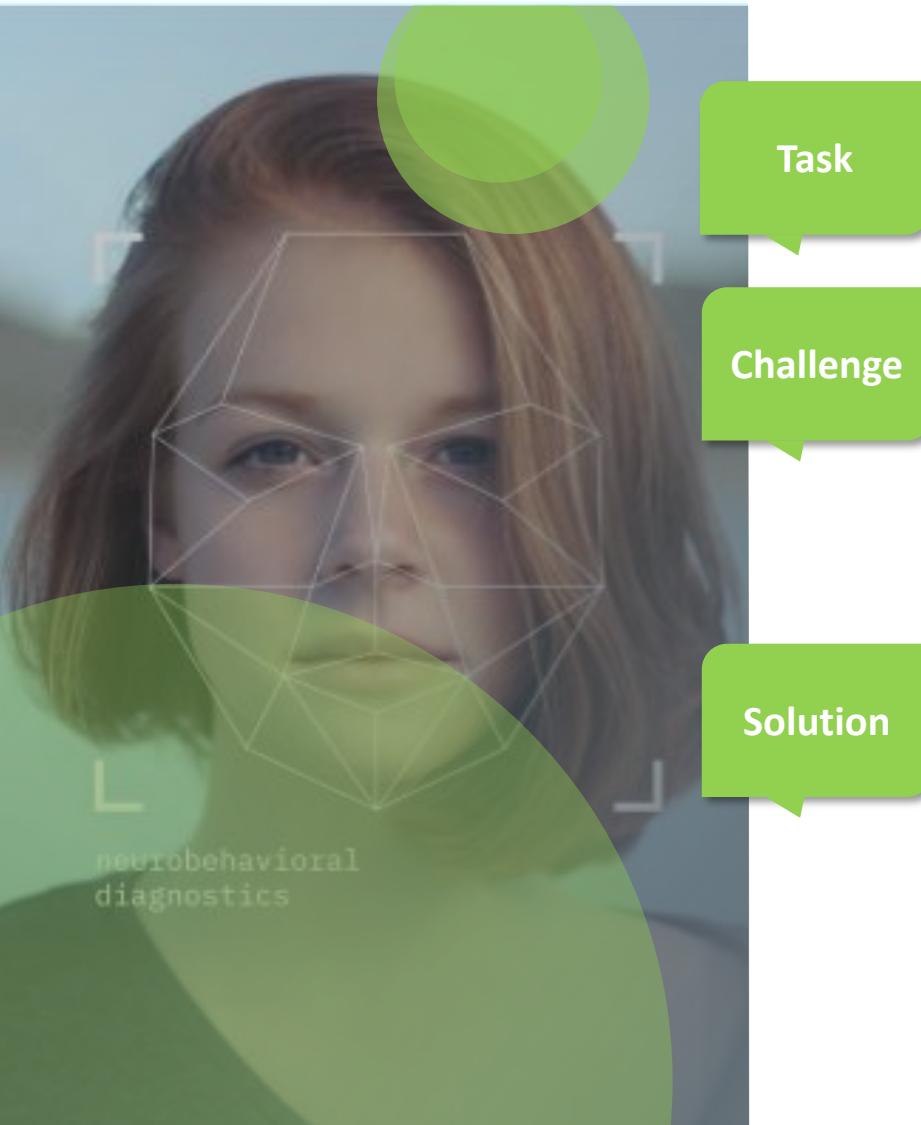
Solution

Automatically extract & organize information on 250,000+ food products.

Our client, a food product data transparency platform, needed to automate the pipeline of data ingestion and quality control of ingredients, brand name, and nutritional facts for food products to ensure food product claims match product ingredients. Data was stored in more than 2 million images of product labels, and they were receiving data on more than 15,000 products per week. The client had OCR algorithms to parse the product label images into text.

Our team trained a specialized deep learning, natural language processing model to classify and cluster 250,000+ unique products into 2,000 categories of aisle, shelf, and food type. We partnered with the client engineering team to incorporate the data engineering pipelines and classification and clustering algorithms into their internal platform.

Video Analytics



Task

Challenge

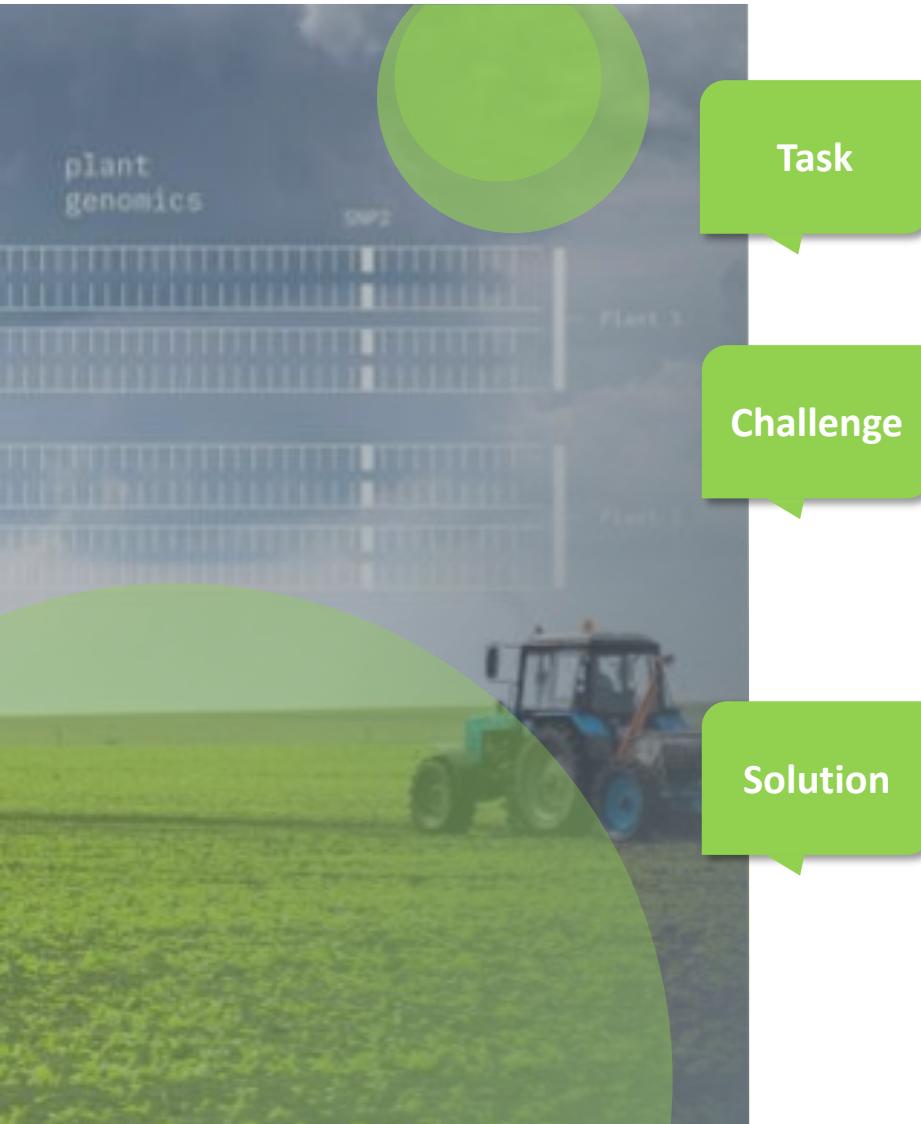
Solution

Create a video AI platform to analyze human behavior and health.

Our client is bringing new therapeutics to market for neurobehavioral disorders and needed a better way to diagnose patients with depression and anxiety based on video and audio content. A platform was needed to enable a digital diagnosis to support patient stratification for clinical trials and to assess the efficacy of treatment.

We partnered with the client's data science and software engineering teams to design and build a platform to use machine learning to improve the diagnosis of patients with depression and anxiety. Time series audio and video data, captured via a mobile app, were feature engineered to train a model for predicting clinical outcomes. Improved diagnosis will enhance the stratification of patients for trial enrollment and accelerated assessment of therapeutic response.

Bioinformatics



Task

Challenge

Solution

Build an AI platform to find targets for genetic engineering to improve crop yield.

Our agricultural biotech client needed a platform to identify gene targets for desired traits from complex genomic and environmental relationships, based on genome wide association studies (GWAS), and in context of current scientific knowledge.

We used machine learning to identify the association of genomic variants to plant traits. We trained NLP models on a large set of published scientific literature to put variant recommendations in the context of global biomedical knowledge, providing scientists with a better understanding of past studies and the competitive landscape. Early results on crop yields have proven the validity of causal gene recommendations.



Thank You!

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