

Brain

Industrial and Trusted AI Platform
for Financial Services



About DreamQuark

DreamQuark develops Brain, an Artificial Intelligence platform dedicated to business users and Citizen Data Scientists in banks & insurance. Brain delivers explainable predictions for better decisions in marketing, risk, fraud and compliance and is in production at BNP Paribas, Groupama and AG2R La Mondiale to name a few.

Building and deploying business-centric and industrial AI applications requires unique data science skills, deep business knowledge and IT expertise altogether. To remove these barriers, Brain has been developed to automate data science tasks and simplify predictive models industrialization. Within few clicks, business users can create powerful AI based business application which can be easily deployed in any existing IT system through APIs.

Brain leverages patented Deep Learning and advanced algorithms, which benefit from years of in-house research and development. The platform provides users with explanations for every single prediction the platform generates, empowering business users to keep full control of the technology, validate business sense and comply with regulations & ethical standards.

Brain



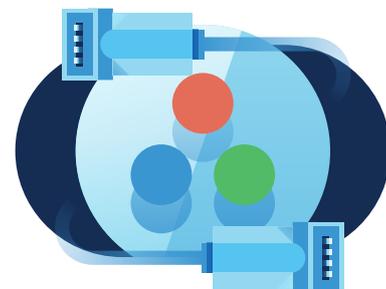
Easy to use

Brain automates all data pre-processing tasks including data formatting, identification of variables transformation and models training. Without any Data Science skills and within few clicks, business experts can now create powerful AI business application which can be easily integrated in any existing IT system through APIs.



Transparent

DreamQuark's Brain solution avoids the "black box" effect by providing users with transparent explanations for every single decision the platform makes: users can easily understand what was important to create the model and identify any bias. Brain tracks any changes in models & data and empowers business experts to comply with existing and future regulations (such as GDPR).



Easy to deploy

APIs
Multi Cloud
Multi Tenant

Dataflow Management

Brain has been designed from the ground up to easily connect your data to the platform either by important your dataset manually or building a dataflow between your repository and Brain. This allows coporation to use Brain with a small team of business experts or a large collective and indistrualized process.



Manual importation

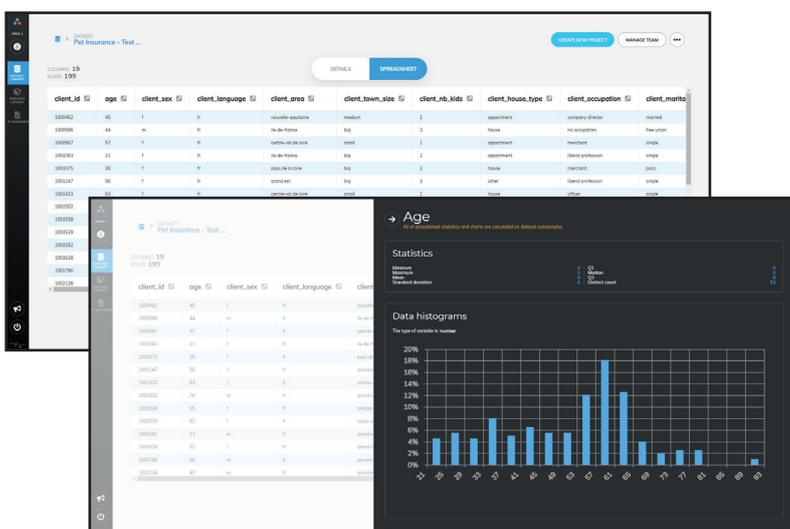
Users can import your dataset in the .csv format. The platform features an automatic analysis and processing in order to automatically detect not valid format.

Automated importation

Users can also directly upload data via DreamQuark's APIs import mechanism that let users import data from Hadoop, most popular SQL databases and ETL solutions.

Data exploration

Brain includes an ergonomic spreadsheet viewing mode to explore your data. For each variable, a dynamic panel displays useful information such as a distribution histogram as well as global statistics including lowest and highest values, mean and variation. Users is also warned regarding empty cells rate and target usability detection. Therefore Brain provides the necessary basic information to detect any obvious errors in data before using them for model training.



MAIN FEATURES

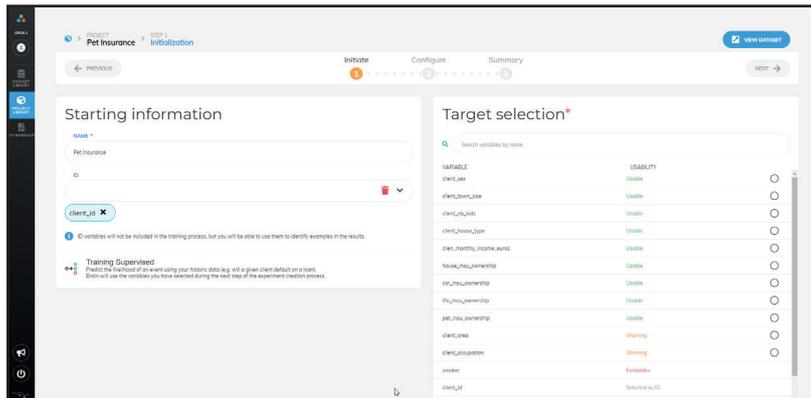
- Dataset exploration via integrated spreadsheet
- Variable distribution histograms
- Variable statistics (min, max, mean, variation)
- Variable empty cells rate
- Variable detection for «target» usage
- Variable statistics
- Dataset sharing with right management
- Dataset search tool

Model Training

Brain is an automated machine learning platform. This means the platform will automatically set up and adjust all the parameters of the training process to generate the best models as output. Users just need to select or remove the variables which will be used as input and the final target.

User can choose between different training option such as supervised, deep recommendation learning and multi-class learning according to its business challenge.

During the entire process, users are guided step by step and Brain's automatic warnings display and error detection keep it safe from mishandling. For instance the platform features an automatic leak detection to avoid biased model.



MAIN FEATURES

- Supervised training
- Deep-recommendation training
- Multi-class training
- Variables search and selection
- Automatic leak detection
- Advanced splitting configuration
- Number of trained models configuration
- Automatic variable interpretation
- Automatic variable warnings
- Email notifications (training done, failed, etc.)
- Pause/resume training

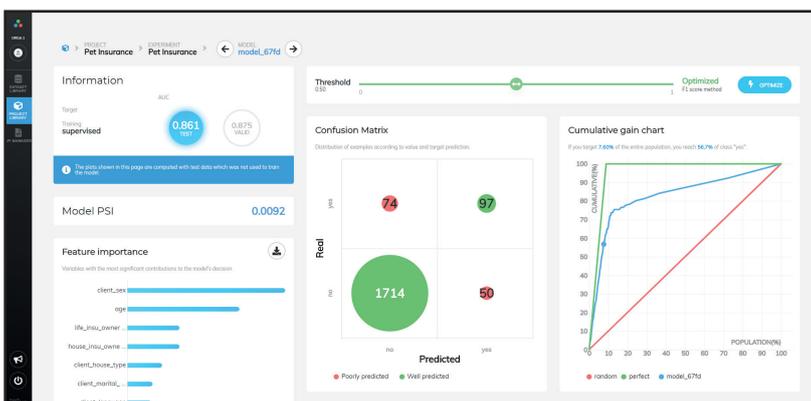
Model selection

The training process will result in the five best predictive models ordered by AUC score.

Brain features a comprehensive view of the model performance. Users can rapidly understand how the model performs through the dynamic confusion matrix and cumulative gain chart. The platform provides a graphical view of the variables that had the most influence leading to quickly give a business sense of the model.

Brain also includes a model data shifting measure that helps spotting any variation.

Users can manually select a threshold or use the automatic threshold optimization calculated on the F1 score.



MAIN FEATURES

- Model performance one test or valid data (AUC, GINI)
- Model Data shifting indicator (PSI)
- Threshold selection
- Threshold automatic optimization
- Dynamic confusion matrix
- Dynamic Cumulative Gain Chart
- Feature importance bar chart
- Feature importance exportation

Prediction

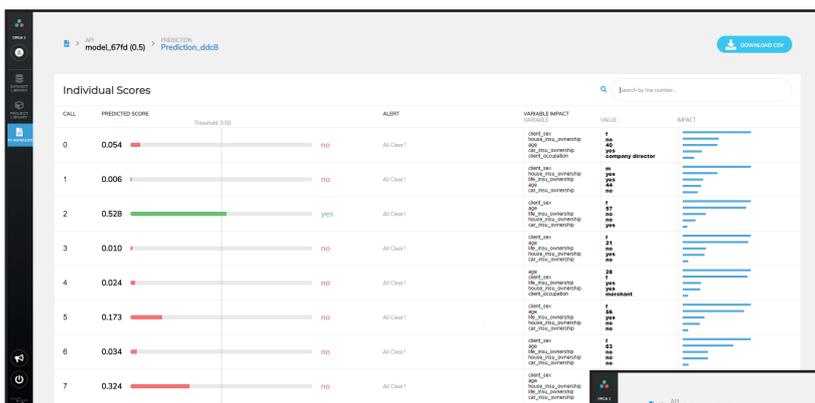
Deploying predictive model in an existing business process is one of the biggest IT challenge. To solve this, Brain provides two different methods to apply AI models on new incoming data.

Batch prediction

Brain features an easy-to-use GUI to apply predictive models on new CSV dataset.

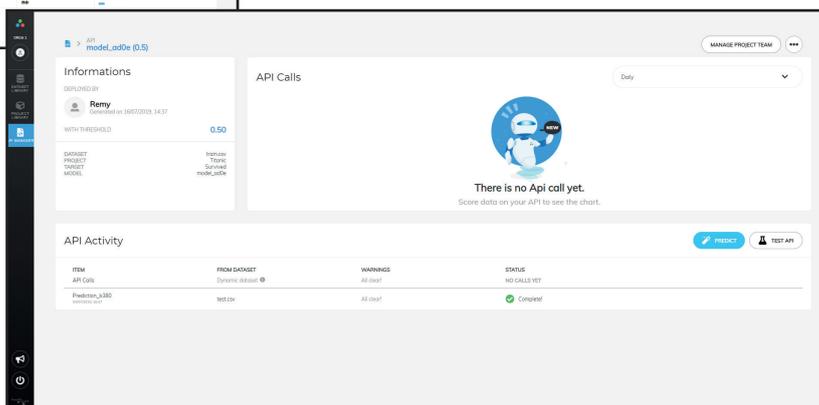
API deployment

For industrial purpose, Brain include a handy feature to embed your predictive model in a standard API in one click. Once the API is running, users can access to a dedicated dashboard to manage all the deployed APIs. Brains features complete monitoring tool to log every API calls.

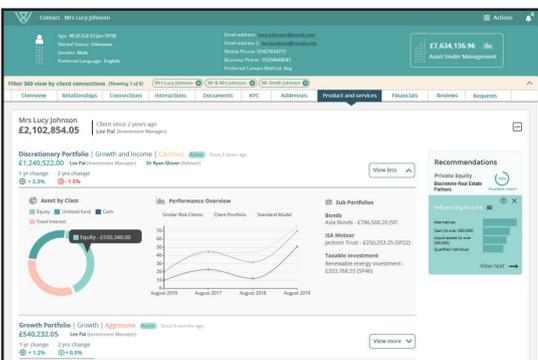


MAIN FEATURES

- Import new dataset
- Export score spreadsheet (xls)
- Model API deployment
- API management
- API monitoring (number of calls)
- API testing (CURL)
- Individual explainability bar chart



Score interpretation and business usage



For each single prediction, Brain provides the variables that had the most influence in the recommendation score. Out of all the data that was used to compute a specific score, the top most relevant variable are calculated and can be represented in a handy bar chart.

Collaborative work

Brain offers advanced feature to facilitate the collaboration between peers and business team as well as comprehensive right access management parameters.

Main Features

- User account management
- Password protected access
- Add/remove contributors to a project team
- Activity tracking with timeline

Architecture

Brain can be use as a complete Software as a Service or on Premise depending on specific business requirements and IT strategy.

Multi-Cloud hosting

Brain supports the business cloud services including Amazon AWS, Google Cloud Services and Microsoft Azure.



On Premise

Brain can be installed on premise.