



# CASE STUDY

## HOMESITE: USING AI TO BE CUSTOMER FOCUSED

### Homesite®

#### Company Info

**Name:** Homesite

**Location:** Boston, United States

**Industry:** Insurance

Homesite learns how to maintain an ideal portfolio of customer segments by predicting which customers will purchase a given insurance quote.

The Internet has changed our expectations. What used to be a person to person deal, has now become a couple of clicks. This has advantages and disadvantages. The good point is that we can check many different insurance providers and select the one that is more convenient for us. The negative side is that many people feel that the service is a bit anonymous.

Personalizing an insurance quotation is therefore very important. But how to know what a potential policy buyer needs? How to know if the quoted price will lead to a sale? With the increased competition, the answers to these questions have become more imperative.

This is why Homesite, a company founded in 1997, and one of the first to offer insurance online decided to use state of the art machine learning technologies to forecast whether, given a quote, a person will buy the policy or not.

Moved by this idea, Homesite assembled a dataset containing historical information about the activity of a large number of customers who were interested in buying insurance from them. The dataset contained information that provided a rich representation of prospective buyers and policies. It included data on insurance coverage, sales, personal, property, and geographic features.

*“LogicPlum facilitates the use of AI from a human-oriented perspective.”*



## LogicPlum’s Platform Capabilities

LogicPlum’s platform is a state of the art computer system that allows users to try many different feature engineering technologies and hundreds of potential machine learning models in an automated manner. Models are then ranked according to a criterion defined by the user, and the most efficient one is selected and presented to the user in a human-readable manner.

This platform is maintained by a team of software engineers and data scientists that ensure that the latest technologies are included. This team also offers support to clients.



## LogicPlum’s Platform Organizes the Dataset

LogicPlum’s data scientists decided to create a CSV file containing the dataset. Then, they set the platform to work. **“It wasn’t a huge dataset, so we went for a CSV file,”** explained the team leader.

The first step for the platform was to analyze the data and re-organize it. Text features were converted to numerical indices, and all the correlations between different features were calculated.

**“This is one of the main advantages of using an automated platform. It discovers many hidden facts and uses them to create an optimized dataset. This has a strong influence in the second step, namely, the speed at which it solves each algorithm tried,”** added the team leader.



## LogicPlum’s Platform Runs Multiple Algorithms

The platform continued by trying the dataset with hundreds of different algorithms. Then, it evaluated each solution by using the area under the ROC curve between the predicted probability and the observed target as a measuring index. Once all possibilities had been assessed, it created an ordered list, from the most accurate option to the worst performer.

The most accurate solution was a Gradient Booster classifier, which, once tested, achieved an average ROC-AUC of 96%. The second option was a Random Forest classifier, with a score of 93%. **“Gradient boosting classifier is an algorithm that combines weak learning models to create a final good predicting model by selecting the good predictions of the weak cases. The platform had provided us with an optimal combination of several models!”** said the team leader.





## LogicPlum's Team Prepares the Final Product

*"Having a model is not enough. It must be transformed into a tool that the user can manage without requiring much-specialized knowledge about machine learning, and that can be easily integrated into Homesite existing software. Thus, we focused on creating a user-friendly interface connected to the model,"* continued the team leader.

*"Having an easy-to-use product facilitates integration and maintenance, which in the end translates into cost-savings,"* added the team leader.

Next, the team produced an AI-generated report, which, in an easy-to-digest manner, provided an accurate narrative of the data, methods, and models used to create the final solution. As the team leader explained: *"The great advantage of using AI resides in the massive amount of data that is interpreted and translated into a clear and articulate document almost instantly."*

He concluded: *"As we can see from this project, LogicPlum facilitates the use of AI from a human-oriented perspective, helping all parties to work as partners, and companies to be intelligence focused."*



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