

## FlexShopper Case Study



### Joe Salvatore

Lead Data Scientist

### Company

**FlexShopper**  
Lease-to-Own Payment Method

FlexShopper is an online provider of lease-to-own financing and payment solutions for customers.

### Use Case

FlexShopper uses Yhat's ScienceOps to implement their data science teams' risk models in their web and mobile applications.

### Results

Yhat has saved FlexShopper hundreds of thousands of dollars by implementing data science models so rapidly.

FlexShopper is an online marketplace for consumers with little to no credit history. Shoppers apply for a spending limit when they visit the site and receive a decision within seconds. Approved consumers can browse over 80,000 durable goods (electronics, furniture, appliances, etc.) for purchase using FlexShopper's 52 week lease-to-own financial instrument.

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### How is FlexShopper able to provide such rapid decisions to applicants that most institutions wouldn't even consider lending to?

"If you applied for a traditional loan, the bank would look at your credit history, FICO score, revolving balances, and so on. Those with little to no credit history, bad credit, and thin or no bank file are really at a disadvantage. Most of our consumers meet these criteria, so we're pulling lots of alternative data in an attempt to get them approved for the goods they need. As soon as a shopper hits submit, we immediately make HTTP requests to a handful of data vendors, each of which returns between 30 and 800 attributes surrounding the applicant. We aggregate around 4,000 data points, including proprietary and custom data, web behavior, and even device characteristics to understand a consumer's risk" explains Joe Salvatore, lead data scientist at FlexShopper.

### "...we're pulling lots of alternative data in an attempt to get them approved for the goods they need."

"Our first models, and it's a stretch to even call them that, only grabbed a few pieces of data. As our data science group started building more sophisticated algorithms, the implementation process got more and more complex. Our data scientists would meet with our engineers and talk through what our models were doing, and how to translate them from R into javascript or php, but it was a terribly tedious process for both teams." "We have over 30 expert engineers on staff, but even for our

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savviest developers it would take weeks or even months to get our R scripts into production. We'd run tests on the prototype and the production code, but the results were never the same. Things get lost in translation when you rewrite code. Our data scientists were losing the value they'd created, and we were wasting engineering time to repetitive work."

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"We considered off the shelf analytics and decision engine tools, but that type of software limits what types of models you can build. The best option we found could do basic credit scoring methods like logistic regressions, but didn't address newer methods, like Classification and Regression Trees. The go-to answer from the vendors was always "you can put in a support ticket." We knew that wouldn't cut it."

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"Our engineering team was a little skeptical at first. They kept asking the Yhat team "can it handle this model...this throughput?" So we did a proof of concept with Yhat, and in two or three days, Yhat just knocked it out of the park. Our engineering team was kind of dumbfounded. All they had to do was point our consumer application page back to the ScienceOps endpoint. It sounds simple, but that's the elegance in the solution. The best solution is often the simplest."

"Once the data science and engineering teams were onboard with the technology, the executive team's big concern was support. When you purchase off the shelf analytics software with a GUI interface you know you're going to be reliant on a support team. With Yhat you have the ability to engineer your own solutions and implement them yourself, but you also get an incredible team to support you whenever you need it. It's the best of both worlds."

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"We have grown leaps and bounds as an organization. I estimate we are saving days and weeks in implementing new models so quickly, which equates to increases of revenue in the thousands, and in some cases, hundreds of thousands. Pretty remarkable!"

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"ScienceOps has helped us dramatically improve how we implement and manage our analytics. To anyone who is serious in investing in data science operations, ScienceOps is precisely the key necessary to making rapid decisions and increasing revenue within your organization."



**FlexShopper**  
Lease-to-Own Payment Method

FlexShopper provides a flexible and easy way for shoppers to get furniture, electronics, appliances and other popular brand name goods with affordable, weekly payments. FlexShopper's goal is to get shoppers approved for the lease amount they need, so they can take home the products you want.

[www.flexshopper.com](http://www.flexshopper.com)



Yhat (pronounced Y-hat) provides a comprehensive platform for hosting and deploying your data science model portfolio. Any R or Python model hosted on ScienceOps can be called via a secure and encrypted REST API endpoint, using either the live (real-time) or streaming (batch) interface. ScienceOps can be installed on-premise or in the cloud.

Yhat also created Rodeo, an app for making it easier to use Python.

[www.yhat.com](http://www.yhat.com)

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