



Data Science in Action: Financial Services

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Financial institutions and large retailers are using data science to drive improvements across the business, from regulatory compliance to the customer experience.

Large banks are especially well-positioned to leverage these techniques because they have access to vast quantities of consumer data, and “big box” retailers aren’t far behind.

Companies of both types are finding that adeptly applied data science can drive revenue and make life much easier and less costly for companies and consumers alike.

Some of the largest financial institutions and retailers partner with firms such as Experian DataLabs to leverage data science, artificial intelligence (AI), and machine learning.

As a presenter at William Blair’s 2018 CONNECTIVITY conference, Eric Haller, Experian DataLabs’ executive vice president and global head, shared examples of how his team uses data science to reduce risk and drive product innovation across the financial services and consumer retail industries.

Give Them Credit

Retailers have a constant stream of potential borrowers flowing in and out of their stores, but the marketing of their credit cards is largely confined to the checkout line. In addition to not aligning to the realities of e-commerce and omnichannel retail experiences, this approach holds up the line and puts customers on the spot.

To create a more effective and user-friendly application process, Experian DataLabs used SMS: the customer texts a word to a short code.

For example, a customer who enters a large retailer seeking a big-screen TV simply texts “big screen” to the store’s code. Within minutes, the customer has secured financing to complete the purchase.

In addition to speed and convenience, Haller said SMS credit applications also offer value in terms of privacy: customers can apply in the store, on the spot, without the fear of being embarrassed if they are turned down.

Executing this credit application solution, Experian DataLabs draws on multiple sources: data the customer provides, data from the mobile carrier, and data Experian already has access to across its enterprise. The process uses sophisticated matching algorithms to identify the customer with certainty.

Identity is fluid and, over time, behavioral. Companies are looking to move away from static variables such as Social Security numbers toward dynamic data about behavior. AI plays a critical role in knitting together all of these data points to create a more accurate, real-time picture of a consumer’s identity.

Clustering Your Way to Better Marketing

Besides being a mouthful to say aloud, latent Dirichlet allocation (LDA) is a powerful tool that is changing the segmentation techniques that banks use to market to consumers.

Using LDA clustering, banks can look at a consumer’s credit card purchase history, map the consumer to various customer segments, and then send the consumer promotions that are likely to appeal to that segment.

For example, if a bank sees a customer purchasing five times more than the index’s average in child-and-infant wear, four times more women’s wear, and not a lot of nightlife activity, the bank can send that consumer promotions that would likely appeal to the young family cluster.

“In the past, segmentation would often be geo-demographic-based, or survey-based, but this is actual behavior-based,” Haller said. “It allows banks more control and precision around how they market.”

Using Machine Learning to Detect Fraud

In addition to driving revenue growth, data science that identifies behaviors or attributes has powerful applications for fraud prevention.

One large U.S. financial institution posed a challenge to Experian DataLabs: Why should the bank let Experian work with its data when it already had a strong in-house data analytics team working around the clock to identify credit card fraud? Haller challenged the bank to provide Experian DataLabs with a huge data set with all of the fraud tags stripped out to see if Haller’s team could identify where fraud had occurred.

Using machine learning techniques, Haller’s team not only found all the previously identified fraud, but it also

identified fraud that the financial institution's team had missed.

Putting Data Science to Work

While cutting edge developments in machine learning and AI are fascinating in the abstract, as investors we focus on how these tools can be applied in real-life settings to create sustainable value for companies and their end-users.

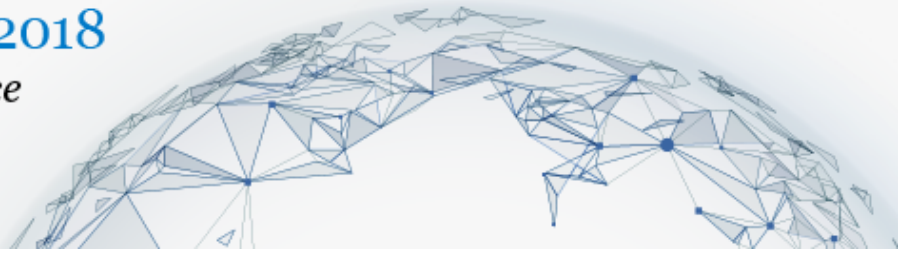
We believe that financial institutions and providers of consumer credit are, in many ways, at the leading edge of using data science to drive efficiencies and growth. We look at how these firms are using advanced concepts in widely applicable and scalable ways to strengthen regulatory compliance, improve the customer experience, and create value across the transaction ecosystem.

To access more insights about how William Blair is reaching beyond traditional investment analysis to think about the white space between asset classes, sectors, geographic regions, and investment teams, we invite you to explore [other posts](#) about sessions at our 2018 CONNECTIVITY conference.

CONNECTIVITY 2018

Exploring the White Space

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