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ATLANTA SPECIAL: **THE ATLANTA FINTECH ECOSYSTEM**

DEMYSTIFYING MACHINE LEARNING TECHNOLOGY

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Dave is Co-Founder and CTO of Featurespace. He studied with Professor Bill Fitzgerald (Featurespace Co-Founder) at the University of Cambridge, where he developed the ARIC platform. Under Dave's leadership, Featurespace has grown from a concept to a commercial success with many blue-chip customers. Dave has been awarded 11 prizes and scholarships for his academic and commercial achievements, including the 2011 ITC Enterprise Award for Young Entrepreneur.

FEATURE SPACE

FEATURESPACE

Featurespace was created by a Cambridge University Professor and his PhD student, Dave Excell, at the forefront and confluence of two academic fields: Data Science and Computer Science. Professor Bill Fitzgerald was an extraordinary inventor who, in his role as Head of Applied Statistics and Signal Processing, contributed towards understanding the extraction of the 'signal' (or meaning) from the 'noise' in data. Dave Excell adapted and commercialized this technology into Featurespace's award-winning ARIC platform.

Machine learning and artificial intelligence are two of the buzziest terms in banking -- from recent national headlines and to FinTech industry events. Machine learning has even made its way into general consumer conversation — self driving cars and mobile phone user authentication have made it almost common place.

It should come as no surprise, then, that behavioral profiling has become prevalent in defining our shopping patterns, preferred products, and even how we order goods and services online. Machine learning is actually making our shopping environment more secure by knowing each consumer personally and individually. Understanding how we purchase can also help banks and FIs identify when you have strayed outside your norm, recognizing when you're buying a surprise gift, or alternatively when a fraudster has stolen your card details. This prevents an embarrassing checkout experience for the consumer, as well as the hassle of reporting fraudulent transactions and registering a reissued card. For the FI, it also eliminates the hours of a case manager's time needed to flag and resolve issues.

It's clear that teaching machines to think, learn and make decisions on repetitive tasks enables the workload of human operators to be cut in half. However, it's important to ensure the machine is learning to optimize appropriately and given relevant data.

Man and Woman vs. Machine Learning

In the FinTech arena, machine learning is considered a force for good. It is an area of rapid growth, investment and exploration - the possibilities should outweigh the fear. In financial services particularly, machine learning contributes toward stopping fraud attempts, as well as decreasing false positives. False positives occur when a genuine transaction is mistaken for fraud, and the transaction is blocked. Anyone who has ever been at the point of checkout and seen a 'transaction denied' message is likely to be hesitant to use that card again. Machine learning can reduce this bad experience in ways that traditional methodology can't.

Machines also work more efficiently than humans and they remove human biases and fatigue. Does this mean that they will ultimately take our jobs? Not necessarily. Instead of taking over human roles, machines can be used to complement these jobs. By adopting machine learning, businesses don't lose employees, they gain time and can redirect their focus to other elements of their role.

Machine Learning in Payments

A recent survey conducted by Juniper Research predicted the overall value of online fraudulent transactions will reach $25.6

billion by 2020. Of that activity, ecommerce fraud will account for 65 percent of the fraud value, while banking fraud will represent 27 percent. This significant jump (up from $10.7 billion in 2015) points to the increased sophistication of fraudsters, who are actively seeking loopholes in the system and exploiting these entry points.

Machine learning technology does not have to wait for an attack to occur. It can actually identify fraud attacks as they emerge, shutting them down before significant losses occur. Concerns of legitimate transactions being blocked are reduced, and employees can focus on providing an improved customer experience.

From a merchant perspective, machine learning can also help you understand your consumers. By knowing your customers individually, you can improve their shopping experience, resulting in increased loyalty. With the convenience of online commerce, traditional brick and mortar stores need to ensure that when their customers switch to their online channel, the experience is positive.

Why is Adoption Taking So Long?

With so many advantages to this sophisticated technology, why haven't all banks migrated to a machine learning platform? In short, complacency. Financial institutions have traditionally been slow to adopt new technology. They tend to retain legacy platforms that are tried and tested.

However, as fraudsters become smarter, FIs are starting to recognize the value of a layered fraud approach. Banks realize machine learning systems can not only prevent potential fraud attacks against their customers, but also create a friction-free environment for their customers. They want to ensure their credit card is not losing its premium place in the wallet because of an embarrassing blocked transaction and increased cost at the call center.

Adoption has also been slow because of perceived expense and time to train the models. Now, FI's are realizing that models can teach themselves based on experience and data, with very little need for manual intervention. Time and monetary investments have reduced significantly and will pay dividends in consumer protection and experience.

Another concern: financial institutions once had the luxury of time to stop a fraudulent transaction in an ACH settlement -- but this is no longer the case. The speed of ecommerce demands payments that can keep up. Same day ACH transaction processing has become a banking standard, leaving less time to detect and reconcile fraudulent payments.

With all the potential machine learning has to offer, it is really only as good as the data housed and the data scientists mining the resources. The notion of 'rubbish in rubbish out' is truly a mantra in the machine learning world. This environment is ripe with possibility but the higher quantity and quality of data that businesses have, the better the improvement in machine learning algorithms and model accuracy.

In the past, these environments have performed well in laboratory testing but were not equipped to handle the complexities that come with real-time enterprise use cases. However, when done well,

machine learning can dramatically improve customer experience and reduce operational costs.

How do businesses start to embrace machines?

To embrace the power you can harness from machine learning technology, you must first know what problem you are trying to solve.

1. Know your numbers
Are you seeing fraud patterns developing with more frequency than in years past? Are your customers complaining about blocked transactions when trying to check out? You must understand the efficiencies you could recognize by redirecting some of your manual work. These statistics can help you maintain perspective on the importance of such an addition to your business.

2. Know your priorities.
Everyone measures success differently. Focus on your KPIs and balance these against your time and monetary investment.

3. Find the right partner.
Once you have established your goals and developed your score card, you are ready to actively seek a partner. The machine learning industry is a noisy one, so take your time and do your due diligence. Every company has something different and unique to offer. Your partner should understand and align with your goals.

Conclusion

Machine learning is not as complex or scary as it seems and has been around much longer than people realize. While we continue to find new and exciting ways to leverage the technology, it is probably already a part of your daily life. New innovations often lead to fear and uncertainty, but realistically, humans aren't going to be replaced with machines. The innovation race is never going to end, so it is important to embrace and understand technology. Learn to work with it and make it work for you. •