

What Happens When You Combine Blockchain and Machine Learning



Blockchain and Machine Learning (ML) have been making a lot of noise over the last couple of years, but not so much together. Made famous as the underlying technology behind [Satoshi Nakamoto's bitcoin](#), it has since grown to prove that it can do a whole lot more.

As a distributed ledger, blockchain can manage almost any type of transaction in existence. This is the primary reason behind its rapidly growing popularity and power.

The blockchain is designed specifically to accelerate and simplify the process of how transactions are recorded. This means that any type of asset can be transparently transacted using this completely

decentralized system.

The key difference here is the fact that there's no involvement from intermediaries like the government, banks, or even technology companies. Instead, it's a massive collaboration with some great code which significantly reduces settlement and clearing times to a matter of seconds.

This technology is so disruptive that it can really revolutionize how governments and companies function. But there are still a lot of hurdles to overcome like security, interoperability (as there will probably be multiple blockchains), and regulation.

But you can bet that this technology is here to stay as some of the big guns like IBM and Microsoft have got involved with [Blockchain as a Service \(BaaS\)](#). Furthermore, many entities like EEA, Cisco, and MadHive have joined the [open source standards organization](#).

So where does ML come into play?

ML can be described as software that changes when it learns from new information. As the software is self-adaptive, it's not necessary to add new rules manually.

Also read: [Machine Learning: Human Rescue Rangers Are Still Needed](#)

A great example of how this works is [spam detection](#) where the software continuously improves its own ability to identify junk emails over time. It does this by studying the construction of algorithms to learn and make predictions on the data.

When Artificial Intelligence (AI) and blockchain converge, the latter can benefit from AI's ability to accelerate the analysis of an enormous amount of data. In fact, putting the two together can

potentially create a totally new paradigm.

By using ML and AI to govern the chain, there's also an opportunity to [significantly enhance security](#). Further, as ML loves to work with a lot of data, it creates an opportunity to build better models by taking advantage of the decentralized nature of blockchains (that encourage data sharing).

Sometimes when all the data from silos converge, you might end up with a qualitatively new data set that's also a better data set. As a result, it will lead to the creation of a qualitatively new model where you can derive new insights which, in turn, can provide new opportunities for building cutting-edge next-gen business applications.

This can be a game changer for the finance and insurance industries as it could be used as [a tool to identify fraud](#). It can also benefit other industries far beyond finance and insurance because of a shared ledger system with [two patterns of ML use cases](#):

- Model chains that address the whole chain or a segment;
- Silo ML and predictive models to address a specific segment of the chain.

The predictive model or silo ML isn't any different from what we currently do with available data. However, model chains are far more complex and should be able to quickly learn and adapt given the chain dependence.

This phenomenon will be driven by quality data

The blockchain has real potential because it will work with quality data. Right now, data science has to deal with a lot of problems with bad data.

From <<https://medium.com/@Intersog/what-happens-when-you-combine-blockchain-and-machine-learning-2afafc9654d2>>

Is there a link between blockchain and machine learning? If not how could they relate in the future?

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9 Answers



[Amit Kumar Jaiswal](#), Won Ether Camp Blockchain Hackathon

[Answered Apr 1, 2017](#)

Yes!!

Recently [LendingRobot](#) launches hedge fund that uses blockchain and machine learning with no human intervention.

[LendingRobot](#), an automated online investment-management service that calls itself a “robo-advisor,” is launching a hedge fund that the company says is administered without human intervention, making use of Amazon Web Services, machine learning, compute servers and Blockchain technology.

Until now, the business of Seattle-based [LendingRobot](#) has been focused on helping manage investments in so-called peer-to-peer loans. In such loans, would-be borrowers too risky for banks seek loans from individuals. Companies including Lending Club and Prosper grade loan applications by risk and make them available to individual investors, most of whom spread their risk by investing small amounts in many individual loans.

For more info Check : [LendingRobot launches hedge fund that uses blockchain and machine learning — with no human intervention](#)

Tools for implementing Machine learning (ML) and distributed ledger technologies (Blockchain) can now be used relatively easily and cheaply in insurance processes.

Used well, they present a great opportunity to improve productivity and security.

However, companies need to ensure that implementations and subsequent operations are as painless and risk-free as possible.

Machine Learning

ML describes software that changes (“learns”) when exposed to new information.

Explicit programming to add new rules is not required as the software is self-adaptive. A good example is spam-detection software that improves its own ability to spot junk email over time.

Insurance underwriting presents a strong use-case for ML. Algorithms can be trained on millions of examples of customer data, actuarial information, and policy outcomes.

Underlying sometimes non-intuitive trends can be unearthed as new information continues to be captured, and underwriting decisions can be improved as a result.

Blockchain

Blockchain is a secure record of transactions collected into blocks grouped in chronological order and distributed over different servers to provide reliable provenance. The technology uses digital signatures and a consensus mechanism that ensures participants can agree on which transactions are valid.

From developer experience, I would say that Blockchain is going to be an important part of the InsurTech revolution. Blockchain benefits will include improved underwriting accuracy, reduced administrative costs, and improved success in preventing claims fraud.

Thanks A2A.

From <<https://www.quora.com/Is-there-a-link-between-blockchain-and-machine-learning-If-not-how-could-they-relate-in-the-future>>

[Samantha Radocchia](#) Follow

Co-Founder at Chronicled // Blockchain Expert // Forbes 30 Under 30
Oct 24, 2017

Here's How IoT, Blockchain, And Machine Learning Are Working Together To Seriously Innovate Supply Chain Management



Each generation grows up with a technology that defines it. For millennials, the internet went from being something we vaguely knew about as children to an essential part of our daily lives.

Adoption of new technology starts out slowly. Those who are paying attention start talking about its potential for disruption. Then comes the initial implementation. The general population begins to take notice of the benefits, and then change occurs rapidly as adoption increases dramatically.

Suddenly it's enmeshed in everything we do.

Blockchain Is Our Next Breakthrough

Blockchain is one of those defining technologies that will change and improve many industries, particularly the supply chain space. And it's set to enter that phase where implementation moves quickly. It's already happening as we speak, and the implications are enormous.

But why does the supply chain need improvement in the first place? There are three major problems with our current supply chains that blockchain can solve.

1. Data Visibility

Our first major problem is with data visibility. You've likely heard about big data and the benefits of collecting and analyzing the vast amounts of data generated by a product supply chain. But right now, that data is siloed in private cloud databases. When data is segmented, the benefits of having it dwindle. But blockchain stores data on a single, federated data sheet.

Take air quality monitors, for instance. These environmental data sensors track the air quality in a specific region, and we use them all over the world. Currently, the data from those sensors is segmented, controlled, and even manipulated, by governments and other organizations. Putting that data on a blockchain would present us with a complete and transparent picture of the air quality around the world, not just snapshots from different regions.

2. Process Optimization

The processes that make up our current supply chains simply aren't as efficient as they could be. The solution lies in blockchain and its ability use smart contracts. Smart contracts essentially automate an existing process in a secure manner. They allow you

to program a set of conditional rules—*If* a condition is met, *Then* payment is released. But not just payment. It can be any next step that facilitates a faster and more efficient supply chain. And the contract is publicly recorded and cannot be tampered with, so it's much more reliable than a third-party mediator. Blockchain will allow us to skip those third-parties and optimize processes in the supply chain to their full potential.

3. Demand Management

The third problem we need to solve is demand management. This relates back to data visibility. When our data is segmented, we can't leverage the true power of big data and machine learning. Instead, we end up making predictions and writing algorithms that determine demand in a reactive way. We're using past data and assumptions to calculate demand, and it isn't efficient.

Each company does this on their own, using only a tiny part of the data available because that's all they can see. Blockchain's single federated data sheet doesn't just store data, it also lets companies build on top of it to perform analytics and optimize demand management. It takes the guesswork out of demand management so that companies can produce exactly the right number of products that their customers need.

As you've probably noticed, blockchain technology can potentially solve all three of our major supply chain issues simultaneously. And when that finally happens, we're going to be looking at a major paradigm shift in the supply chain.

The Demand Chain

In fact, we could be moving from a supply chain, to what Michael Casey, Senior Advisor to MIT's Digital Currency Initiative, calls a *demand chain*. The demand chain is a customer driven model with fast turnarounds, lower costs, and greater efficiency. In this model, producers respond to the demand of customers, and

products are collectively produced from an amalgam of suppliers.

This shift will have huge implications for our world.

We could soon be seeing circular economies at scale, with materials sourced locally, and products produced and recycled in local hubs. That means the potential for production with true net-zero waste. Machine learning will be able to determine the demand for a specific product or part based on location, availability, and the materials available for production. In essence, we can create a fully global, decentralized platform for production, one that is optimized based on machine learning algorithms that track behavior and demand.

I know, it sounds futuristic and a little optimistic. But it really isn't. We're already beginning to implement blockchain technology into our supply chains, and mass adoption is coming sooner than you think.

From <<https://hackernoon.com/heres-how-iot-blockchain-and-machine-learning-are-working-together-to-seriously-innovate-supply-e11ae76f9e8f>>

Blockchain, Machine Learning, Robotics, AI Will Reshape Digital Business In 2018

By [A.R. Guess](#) / October 27, 2017 / [0 Comments](#)

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by [Angela Guess](#)

According to a recent [press release](#), “Blockchain, together with artificial intelligence, machine learning, robotics, and virtual and augmented reality, have the potential to deliver disruptive outcomes and reshape digital business in 2018. And companies that have not started the digital investment cycle are at high risk of being disrupted. This is according to the list of top [IT predictions for 2018](#) published today by Dimension Data. But the top trend for the coming year is the adoption of Blockchain – the technology behind Bitcoin – and its immense potential to disrupt and transform the world of money, business, and society using a variety of applications.”

The release continues, “Etienne Reinecke, Dimension Data’s Group Chief Technology Officer, says Blockchain has gone from strength to strength. ‘Last year, when we looked at the top digital business trends for 2017, we predicted that centralised transaction models would come under attack. We were spot on. In the financial services sector, we’ve seen the US and European capital markets moving onto Blockchain platforms, and similar activity in markets such as Japan. Considering how conservative and compliance-focused this sector is, that’s quite remarkable.’”

The release adds, “Reinecke predicts that Blockchain will also deliver on the promise of Internet of Things (IoT) in the year ahead. “In the world of IoT you’re generating millions of small transactions that are being collected from a distributed set of sensors. It’s not feasible to operate these systems using a centralised transactional model: it’s too slow, expensive, and exclusive. To extract the true value from IoT technology you have to be able to operate in real time. Once a sensor alert is received from a control system you must react to it, meter it, and bill for it instantly – all of which negates the viability of a centralised transactional authority. The cost of the transaction has to be near-zero or free, and the cost elements of a centralised model simply don’t support the potential business model in IoT,’ he explains.”

Read more at [Real Wire](#).

Photo credit: Dimension Data

From <<http://www.dataversity.net/blockchain-machine-learning-robotics-ai-will-reshape-digital-business-2018/>>

Do IoT, Machine Learning, And Blockchain Mean The End For Supply Chain Managers?

From <<https://channels.theinnovationenterprise.com/articles/do-iot-machine-learning-and-blockchain-mean-the-end-for-supply-chain-managers>>

In his essay 'The End of History?', Francis Fukuyama argues that we have reached 'the end point of mankind's ideological evolution and the universalization of Western liberal democracy as the final form of human government.' Essentially, progress is at an end and the only way now is backward.

In supply chain management, it seems that we are fast approaching a similar point. The Internet of Things (IoT), machine learning, and blockchain are surely the final technologies for supply chain management to really embrace. We are, so to speak, handing the keys to the farm over to the machines.

The phrase supply chain was coined in 1982, the same year the computer won Time's Man of the Year. Since then, technology and supply chain have always gone hand in hand. The explosion in communications technologies over the past twenty years, in particular, has revolutionized the way organizations approach supply chain management. The pivotal moment came when Microsoft released Internet Explorer 1.0 in 1995, enabling cost-effective dissemination of information between disparate parties in the supply chain, real international production networks, and lean manufacturing.

Communication between machines - the IoT - is the next and likely final phase in the communications revolution. Technologies such as sensors, communication devices, servers, analytics engines, and the decision-making capabilities that are made possible with machine learning algorithms will link the physical and information worlds more closely than ever before. Using a closed loop based on bits, it creates fundamentally new, non-linear ways to manage what has traditionally been a

linear sequence of steps, expanding options for managers looking to create value.

Growth has already been rapid. In a 2014 study by LNS Research, 43% of manufacturing executives didn't understand or know about the IoT, presumably, therefore, also not knowing how the IoT could impact their supply chain. However, according to a recent Accenture report, the adoption rates for big data analytics and IoT will increase from 30% in 2015 to 43% by 2020. This will, in turn, see 182,000 new jobs created during the same period. Eyefortransport research also found that IoT technology investments went up significantly between 2014 and 2016, with IoT sensor and monitoring technology increasing by 19%.

The benefits are clear. When used effectively, IoT can cut costs and improve efficiency, meaning companies can do things faster, more accurately, and with less personnel. For example, it can be used is the constant monitoring of machinery for signs of damage. This will allow organizations to deal with potential problems as early as possible, rather than waiting for them to pass crisis point. Not only does this prolong the life of a company's machinery, it could also prevent potentially dangerous incidents from occurring, even shutting down any connected equipment that might worsen a situation. IoT technology can also help keep check on demand at any point in the chain. Automated messages can be sent as to where a product is needed, leading to better inventory designation.

The amount of data that will be produced by the plethora of sensors installed throughout supply chains will also be tremendous - too great for humans to deal with. For the potential of IoT to be realized, this ocean of data needs to be converted into actionable, contextualized information. This is dependent on machine learning algorithms to find the patterns, correlations, and anomalies from which analysts will be able to make improvements to supply chain processes, inventory management, and so forth.

Another technology that is pushing supply chain

management to new heights is blockchain. In terms of hype, blockchain has almost been on par with that of IoT and AI. Blockchain is the technology behind Bitcoin. It is a cryptographically secure public register of transactions operated by a decentralized peer-to-peer network that has implications for every industry, and its implications for transparency will help few areas more than supply chain. Indeed, Jerry Cuomo, IBM's vice president for blockchain, has argued that, 'Supply chain is the most likely application for the technology after financial services.'

We have already seen blockchain technology adopted by a number of supply chains, who have recognized that it the added level of trust that it provides - particularly important in establishing provenance of products so that you can best verify their quality and sustainability.

Provenance enables greater transparency in supply chains by providing all physical products with a record authenticating its origins and is vital to the quality and value of many products. IBM's new Everledger service uses the company's LinuxOne system to allow supply chain customers to build and test blockchains in a secure cloud. This protects all supply chain partners against theft, counterfeiting, and other forms of corruption. Everledger Chief Executive Officer and Founder Leanne Kemp notes that, 'When you are in the business of provenance, secured records, access and transparency are everything. There is no compromise when it comes to security and one cannot underestimate the expertise required to enable this. Having the opportunity to build, test, scale and refine Everledger on IBM Blockchain, underpinned by a security-rich infrastructure, is a game changer. It has accelerated our ability to move fast and deliver the most innovative solutions to our partners internationally and confidentially.'

We are at the beginning of the IoT, machine learning, and blockchain journeys, but their impact will turn supply chain management on its head and likely leave it changed forever. This is not to say that supply chain

managers are going to be rendered redundant any time soon. There will be people needed to oversee the handover, but many jobs will likely fall by the wayside, and when the three technologies are utilized strategically, their responsibilities are likely to be limited to nurturing and maintaining partnerships and watching machines do all the work. The worry is that supply chain managers may be reluctant to adopt such technology as a result, fearing that they are essentially training up their replacement. They may be right to be fearful, or we could see human supply chain managers finding new ways to make themselves relevant. As Fukuyama notes, 'perhaps the very prospect of centuries of boredom at the end of history will serve to get history started once again.' How this manifests itself remains to be seen.

From <<https://channels.theinnovationenterprise.com/articles/do-iot-machine-learning-and-blockchain-mean-the-end-for-supply-chain-managers>>

How Blockchain and Machine Learning Can Work Together

December 22, 2017

[Blockchain](#)

[No Comments](#)



Machine learning is the process in which systems autonomously learn from data and information patterns. The process is extremely valuable due to its ability to allow for programs to learn and adapt outside of their initial programming.

The most vital resource to machine learning is information. In the modern world, large scale data collection has allowed for cases of machine learning that are able to surpass anything that was possible with previous technology.

Big data has created a wealth of opportunities for companies to train artificial systems to learn independently by analyzing trends in data.

With the blockchain revolution now among us, it's worth considering how these emerging technologies can complement one another to create a smarter and more efficient process.

Blockchain & Machine Learning

[Blockchain technology](#) and machine learning are concepts that exist entirely separate from one another. However, often separate technologies can be used together to create exciting applications that benefit the world at large.

Since blockchain has many [applications for big data](#), a natural progression involves partnering the technology with machine learning processes.

Blockchain technology is an inherently robust form of information storage due to its nature. Since blockchain works on a peer-to-peer network, it allows for a system of data storage that benefits individual parties working together and eliminates conflict of interest.

Additionally, blockchain technology is highly secure in its ability to verify information through both internal and external systems. This lends itself well to big data and, by extension, machine learning processes.

The most vital factor in large scale information storage is accuracy, as fraudulent data can skew systems and inhibit a program's ability to learn or develop as intended.

A Real-World Example

To better understand blockchain technology's potential impact on the world of machine learning, it may be helpful to consider a real world application where the emerging technology is actively being used.

[LendingRobot](#) is a real-world example of a company that's partnering machine learning and blockchain technology in order to deliver their ideal service offerings to their clients.

The service is an automated advisor for peer-to-peer lending; a practice that matches lenders and borrowers online. LendingRobot is using machine learning to automate loan selection and trading, and the process is built on the backbone of blockchain technology.

In this application, blockchain technology is used to add transparency to the platform. LendingRobot's developers benefit from this in two ways.

The developers benefit from increased public trust, an asset that is in increasingly short supply. By making their public ledger available, they are able to show users exactly how transactions are occurring and eliminate a need for blind trust.

Additionally, in this application blockchain technology benefits the service by improving data integrity. With the public ledger available for scrutiny from both external and internal systems, automated processes help to make the data virtually tamper-proof.

Data corroboration

Compromised data leads to machine learning systems that are inherently prone to missteps in development.

Essentially, imagine learning a new skill by reading resources that are incorrect. While you would theoretically still gain knowledge, it would be built on the backbone of corrupt information and would be virtually useless.

This is the same with machine learning, as accurate data is the only resource programs are able to learn from.

As stated earlier, blockchain technology can eliminate parties acting in their own self-interest. Cooperation between the data-collection services could have a huge impact on machine learning.

This is because companies would be able to eliminate redundancy and trade information in a way that would be easy to verify and benefit all parties by increasing access to data for the purposes of machine learning.

Internally, when information is added to a blockchain it is entered in 'blocks.' These blocks are verified against pre-existing blocks in the network to corroborate data and confirm its legitimacy before adding it to the ledger.

However, these factors barely scratch the surface about how machine learning and blockchain technology could be used together to create more robust learning systems that benefit from heightened data integrity and access.

We're already seeing examples in the real world of these emerging technologies working together, and the future promises a seemingly endless array of real-world applications for blockchain

technology.

Develop a Blockchain Solution for your Business

If you're looking for a blockchain solution to streamline your organization's operations, contact [eXeBlock Technology Inc.](#) today to learn about how our [custom blockchain development services](#) could benefit your business.

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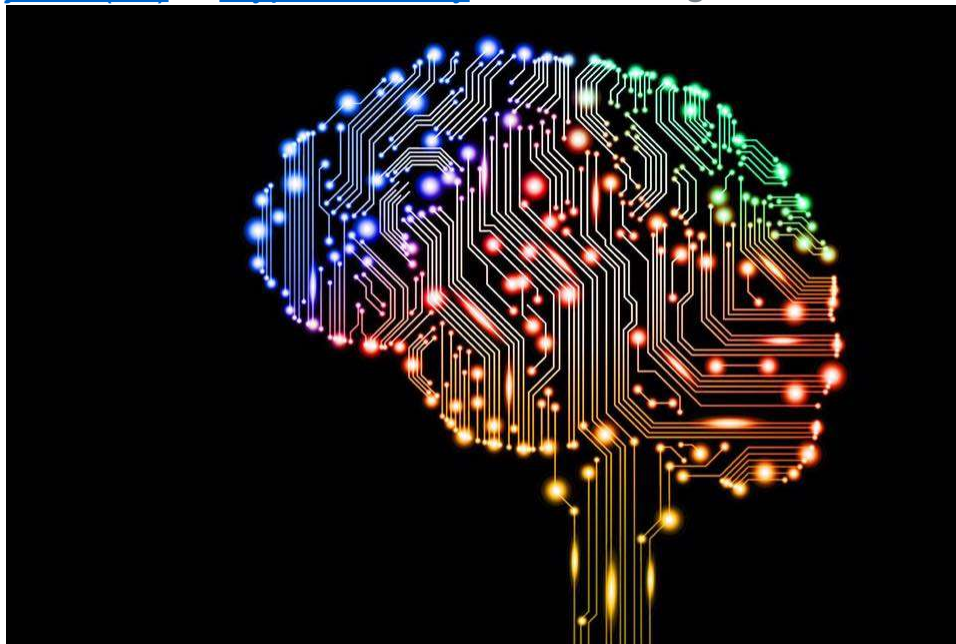
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Tags: [artificial intelligence](#), [Blockchain](#), [blockchain development](#), [blockchain technology](#), [dapp](#), [DApp development](#), [eXeBlock](#), [LendingRobot](#), [machine learning](#)

From <https://www.exeblock.com/how-blockchain-and-machine-learning-can-work-together/>>

The Blockchain and Machine Learning

[jaafa \(25\)](#) in [cryptocurrency](#) • 6 months ago



Two of the biggest headline creators in the tech world today are blockchain and Machine Learning, with good reason. Both of these disruptive technologies have already begun to change the sectors in which they are being applied. Individually blockchains and ML have the power to radically alter sectors ranging from finance, robotics, communication and data analysis. So what could they do if combined? How might they be combined?

First lets look at what each technology currently does by itself. As of right now blockchains are mostly used to facilitate the creation and distribution of cryptocurrencies in an attempt to break away from the centralised and regulation heavy control of traditional financial institutions. Other applications for blockchains do exist and new ones are emerging all the time (such as data management systems and legal contracts) but their use in cryptocurrency remains dominant.

Machine Learning (ML) is a technology that has actually been around a

long time, with many of the modern approaches finding form in the 1990s when seminal papers on SVMs and Recurrent Neural Networks were written, although it could be argued that some form of machine learning has followed in step with computing since the 1940s. However ML really has taken off in the past 10 years or so with the massive improvement in both computing power and data gathering capabilities leading to the advent of "deep learning". Very simply put this means throwing a whole load of data and computing power at a problem until it's solved. This can be applied to problems in data analysis, autonomous vehicles, imaging recognition systems and many more.

(source: XKCD, <https://xkcd.com/1838/>)

So now we know what each technology does, how can they be combined in a useful way? Well one way they can work together is to solve problems within each technology. For example ML usually necessitates the collection of vast amounts of data in order to be useful. Blockchains are a natural way for ML researchers to gather data. One can imagine a neural network deployed on or piggy backing off a blockchain that has wide distributions in order to gather data for any number of applications. Additionally, the neural network could be deployed to analyse the blockchain itself, monitoring for example, network load and perhaps even tapping into dynamic parts of the blockchain code in order to manage changes in the load.

Another scenario might see the blockchain being used as a secure database, constantly collecting real time information ranging from financial information about a business or company, health care information from a hospital, information about electrical grid power consumption etc. Meanwhile the ML program can be analysing this data also in real time and providing useful analytics or motioning information. One can even imagine a scenario where the ML program itself would automatically enact changes in the system in response to this real time information.

These are just a few ways blockchains and ML can be used in conjunction with one another. With increased advancements in both technologies it's certain the possible ways they can interact will also

increase. As the overlap between these technologies continues to converge, we may soon see completely decentralised, autonomous blockchain/ML systems that require little to no input from humans, to operate.

From <<https://steemit.com/cryptocurrency/@jaafa/the-blockchain-and-machine-learning>>

Currently, different types of businesses use predictive analytics like

the financial services, which is majorly their life force. Other businesses like e-commerce stores and online video streaming services have enjoyed the sweet power of predictive analytics.

Predictive analytics is a modern marketing tool. Prediction becomes difficult if significant meaning cannot be translated from a large data set.

The fun part is that many software companies are beginning to come up with interesting ways on how to make these technologies interesting, by making them quite interactive and user-friendly and this is changing how we sell, do business and even portray brands.

Big data technology is the new phenomena associated with most corporations having limitless data sets and information. Data can be easily generated and when things go well they can grow at a quantum rate, this quickly becomes a mess if not properly organized. However, interesting and beautiful solutions are popping up due to data growth, forcing scientists to come up with even more brilliant algorithms; entrepreneurs more groundbreaking solutions. As data creation and consumption grows, it only indicates that there is more data evolution to come.

Blockchain is the underlying technology that powers bitcoin. In recent times, it has become a frontier for cybersecurity, IOT, digital ledgers, and other data technologies respectively. A lot of research and investment goes into the advancement of blockchain technology, due to the massive potential and countless application it offers. Good news is, Blockchain is a few years away from becoming a massive marketing tool. Blockchain is also tipped by many, to be the most significant technological breakthrough since the invention of the internet, and it will become an important part of many businesses in the coming years.

AI and Machine Learning sound quite futuristic and geeky but it is the friendliest of all seeing how bots are taking over the web space in a viral manner. There is no doubt to the power of this piece of technology. AI is gaining practical use and is becoming inseparable from daily life activities, gaining relevance across

almost sectors ranging from banking, health, transportation defence etc. With a wide and an almost endless variety of AI applications, we are most certainly in the dawn of an automated world.



Therefore, it doesn't matter if it's blockchain, big data, predictive analytics, AI or machine learning, these technologies share so much in common because they all depend upon the other for an effective solution. When you hear any of this terms for most people what comes to mind is robotics or advanced tech, *"yeah they are quite advanced"* but what should come to mind is the transformative power of this tech in all business sphere such as marketing, sales, customer service, growth hacking etc. With clear benefits of AI to humanity, it is imperative to think AI to any solution. Judging by recent trends, it is easy to understand why humans interact more with businesses that adopt AI solutions due to convenience.

Businesses have become competitive and techy, therefore the new generation of salesmen, are the ones who can effectively sell with the aid of tech.

A hazy view of what is to come outperforms complete darkness.

Now that almost all electronic devices have gone smart why not businesses? My definition of a smart business is one that can offer smart services, which translates to exponential growth.

From <<https://towardsdatascience.com/predictive-analytics-blockchain-big-data-ai-and-machine-learning-are-the-technologies-shaping-the-41b2069a70af>>

LendingRobot launches hedge fund that uses blockchain and machine learning — with no human intervention

BY [DAN RICHMAN](#) on January 26, 2017 at 8:00 am

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Emmanuel Marot, co-founder and CEO, LendingRobot. (LendingRobot photo) [LendingRobot](#), an automated online investment-management service that calls itself a “robo-advisor,” is launching a hedge fund that the company says is administered without human intervention, making use of Amazon Web Services’ machine learning, compute servers and blockchain technology.

Until now, the business of Seattle-based [LendingRobot](#) has been focused on helping manage investments in so-called peer-to-peer loans. In such loans, would-be borrowers too risky for banks seek loans from individuals. Companies including Lending Club and Prosper grade loan applications by risk and make them available to individual investors, most of whom spread their risk by investing small amounts in many individual loans.

The investment is attractive, as it can yield 8-10 percent interest paid monthly. But managing the choice of those multiple loans, and investing, re-investing and collecting interest, can get complex and boring, which is why LendingRobot has automated those tasks, taking a fee for its services.

Now, LendingRobot is launching an investment vehicle of its own. Called LendingRobot

Series, the hedge fund is billed as an alternative to traditional fixed-income investments. It, too, invests minute amounts in hundreds of individual, person-to-person loans, but it also includes real estate loans.



The fund is managed by LendingRobot's robo-advisor technology, which the company said scores, invests, and manages market activity without any need for human advisors. Eliminating people from the loop reduces costs and maximizes returns, the company said.

The fund will use blockchain technology to deliver a public ledger that the company described as unalterable.

"Usually a hedge fund is a black box: you get an email each month detailing how your investment is doing, but you don't know what the investment is," said LendingRobot CEO Emmanuel Marot in an interview. "We display every single note, even if the investment in it is tiny. You can view each payment made on it and all the vitals about each loan. Then we calculate and display a notarized hash code, and if we tamper with a single character, that's immediately apparent."

Machine learning, through Amazon Web Services, sifts through the many individual person-to-person loans offered to investors each day and scores each one on 40 attributes, identifying the best ones to invest in. The day's new loans are offered by various companies at various times during each business day. When demand requires it, AWS servers scale up quickly to run thousands of attribute assessments around those times, then scale back down to a much lower baseline level, Marot said. AWS is LendingRobot's exclusive cloud provider.

Fund assets are held in a bankruptcy-protection vehicle. The fund will charge 1 percent of assets under management and caps fund expenses at 0.59 percent.

LendingRobot says it serves 6,500 clients with more than \$120 million in assets. The company was founded in 2012 by founding CEO [Gilad Golan](#) and [Marot](#), who first met at Microsoft and shared an interest in making personal [Lending Club](#) investments. Having to spend hours in front of a computer to monitor new loan opportunities was cumbersome, so the pair created software to automate the process.

Golan left the company in October to become engineering director at Google in Seattle. The company has seven employees and has received \$3.7 million in venture funding to date.

From <<https://www.geekwire.com/2017/lendingrobot-launches-hedge-fund-uses-blockchain-machine-learning-no-human-intervention/>>

Introducing DML — Decentralized Machine Learning Protocol

Wednesday, March 21, 2018 10:10 AM

Introducing DML — Decentralized Machine Learning Protocol

Introductory Video of DML Protocol

Decentralized Machine Learning unleashes untapped private data, idle processing power and crowdsourced algorithms development by on-device machine learning, blockchain and federated learning technologies.

Since AlphaGo, we can already see how powerful and how large the potential of machine learning could be. What if there is a way to potentially engage billions of devices and tens of thousands of developers to make the future machine learning even more powerful yet decentralized? [DML Protocol](#) is the key for this revolution.

Machine learning market is huge, but three big limitations

The International Data Corporation foresees that the industry's revenue will reach over USD210 billion in 2020. Tech giants have heavily invested and gained remarkable achievements in machine learning. However, the current machine learning development is hindered by:

Inaccessibility of Private Data

Traditional machine learning requires datasets to be uploaded to a dedicated server. Due to privacy concern, massive amount of private data stored in individual devices is untapped.

Centralization of Processing Power

Nowadays, machine learning is mainly conducted through a centralized computer, which its processing power is usually limited or confined to the processors of a single machine.

Limitation of Models and Algorithms Development

Only large corporations can afford investing huge initial capital and resources to build in-house machine learning models and algorithms, or acquire tailor-made ones from consultancy firms to apply machine learning in their own business.

DML advances machine learning development by returning power to all ecosystem contributors

We created an open source infrastructure and network which data, processing power and models/algorithms development will all be decentralized.

Data

By deploying encrypted algorithms into all individual devices and conduct machine learning locally, there is no need to extract or upload any private data to a third party server.

All private data will be kept within the devices and only the local prediction results will be transferred. Usage of untapped private data is unleashed as a result.

Processing Power

DML Protocol will utilize the idle processing power of the devices to perform on-device machine learning.

Algorithms

The supply of algorithms will be crowdsourced in our developer community. Customer such as corporates, research institutes, governments or NGOs can simply search or request suitable

machine learning algorithms in DML Algorithms Marketplace.

In order to promote machine learning development, we will also hold various machine learning competitions/blockathons to attract and reward our community talents.

What Next?

In the next articles, we will further explore different components of Decentralized Machine Learning protocol, including the participants, the function of decentralized nodes and the blockchain smart contracts. You will also meet our team and understand why we are building DML Protocol.

Meanwhile, we invite you to dive deeper by visiting [our website](#), reading [our whitepaper](#) and watching [our introductory video](#).

Join the Community

We will announce all the latest and exclusive news in our community. So chat with the team and our growing community by joining [our Telegram channel](#).

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