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Look Out for the Fake AI Rebrand

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  It aspires to be a comprehensive resource of data and analysis for policymakers, researchers, executives, journalists and the general public to develop intuitions about the complex field of AI

- **Look Out for the Fake AI Rebrand - Spot Fake AI Companies Quickly**
  By: Daniel Faggella is the founder and CEO at Emerj. Called upon by the United Nations, World Bank, INTERPOL, and many global enterprises, Daniel is a sought-after expert on the competitive strategy implications of AI for business and government leaders

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  The 13 Providers That Matter Most And How They Stack Up

Daniel Dierickx
CEO & co-Founder
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Over 3 decades
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Harnessing the Power of AI Will Require Companies to Choose Which Capabilities To Invest In

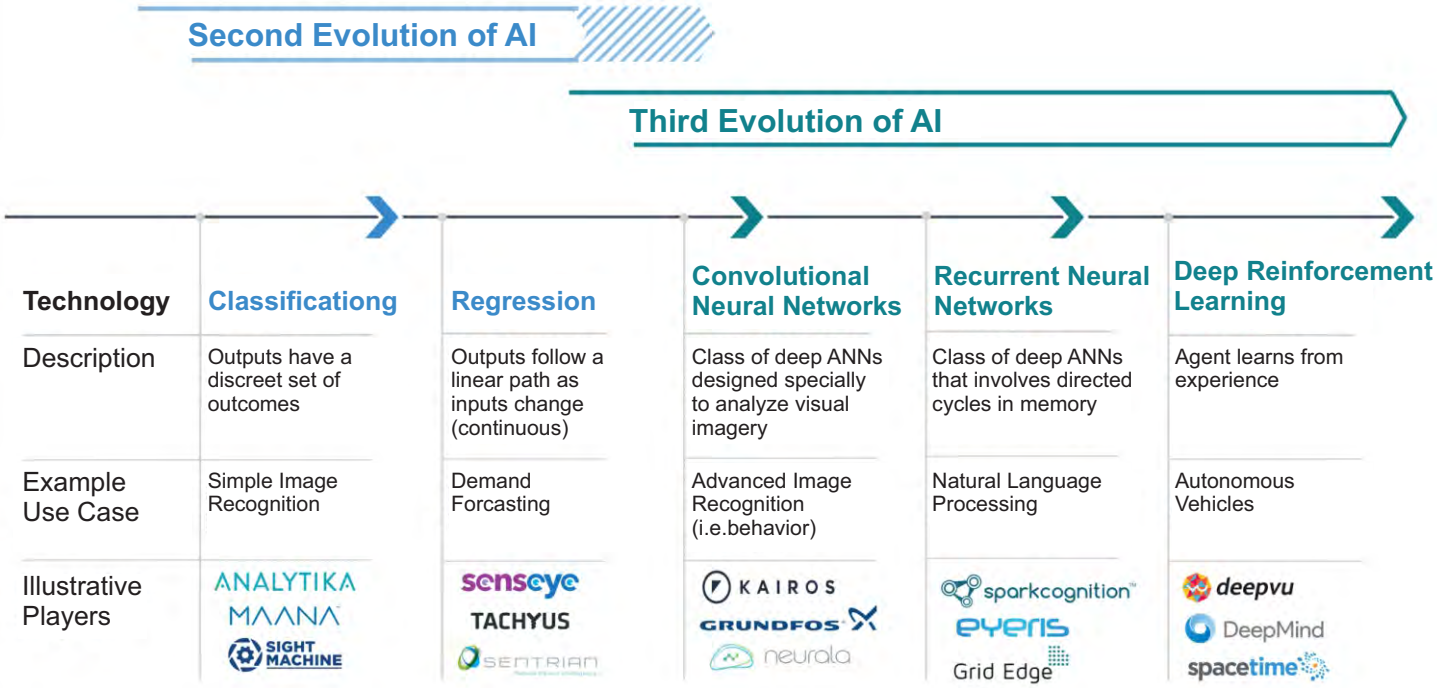
By: Harbor Research

Marvin Minsky, one of the fathers of artificial intelligence, liked to say that we can make a computer capable of beating the reigning genius of chess, but we can't make a robot capable of walking across the street as well as any normal two-year-old child.

The real world is not a strictly regulated, closed system like a chess game. Sensing a player's moves on a wired chessboard and responding quickly and intelligently is one thing. Sensing—and physically responding to—reality (stones, curbs, potholes, pedestrians, oncoming cars) is quite another. In fact, the entire AI industry has been through multiple attempts since the 1980s to grow into a mature market, but each time collapsed because it was unable to meet the unrealistic public and investor expectations generated by non-real-world computing triumphs like those of IBM's Watson.

Of course, digital computing has radically transformed human affairs. But so far, that transformation has taken place on the computer's terms. The marvels of AI and machine learning have largely taken place in rigidly regulated, closed systems; so far, it's been about how many guys in white lab coats do I need to make AI tangibly valuable?

Rapid advancements in silicon, computing and networks are clearly forming the foundations for machine learning capabilities to advance, but these systems are still in their infancy. Many intended use cases for AI can be accomplished with less sophisticated, more cost-effective and traditional tools such as basic regressions. Value derived from machine learning and AI will be realized unevenly across markets, applications and use cases.



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AI REQUIRES CAREFULLY ALIGNING NEW TOOLS to INTENDED APPLICATIONS and USE CASES

Multiple parallel technology developments have evolved that appear now to be increasingly reinforcing and accelerating one another. Cloud infrastructure resources are providing unprecedented computing scale. Mobile computing devices are extending the reach of computing. Embedded systems and IoT technology are connecting and integrating a broad array of physical and digital applications. And, the ability to capture and process massive amounts of data has the potential to inform many new and diverse capabilities.

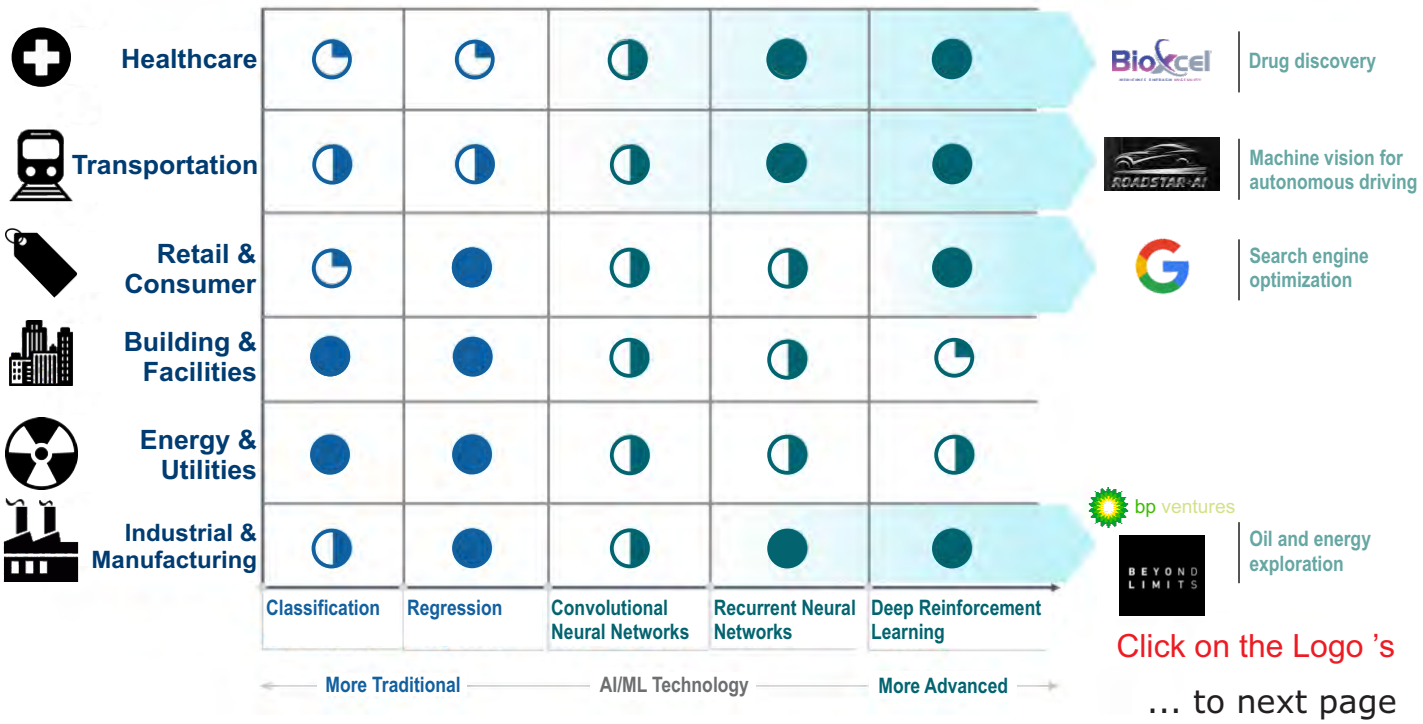
Each of these technologies is powerful on their own, but creative combinations of these capabilities are multiplying their impacts. Human-connected devices and machine-connected IoT devices enable exponentially more data. The scale of infrastructure [cloud] computational capabilities then enables us to capture and analyze all that information. Which, in turn, sets the stage for AI and machine learning tools to analyze and capture new insights.

This new chapter in the evolution of machine learning and artificial intelligence is motivating tech developers and users to search far and wide for relevant applications to apply new advanced neural nets and deep learning tools. Most companies believe that implementing advanced AI solutions will lead to significant efficiencies, growth and competitive differentiation. However, matching new tools to high value applications and use cases will challenge many industry participants.

We all know that AI needs large data sets in order to learn, but what most people do not understand well is the actual scale of data required. While many people have come to understand that AI systems require more information than humans to understand concepts or recognize features, they don't understand that many AI applications will require thousands or even hundreds of thousands times more data. If you examine applications where machine learning is successful it quickly becomes apparent that the bulk of effective applications are in domains where the user can acquire lots of data – think facial or speech recognition and then think about technology developers like Apple, Google or Facebook who all have vast troves of data they can access and work with.

An additional challenge beyond getting access to data is the fact that most machine learning applications today can only address a single type of learning. There really are no neural networks in use today that can be trained to address multiple parallel applications such as identifying images, playing video games, predictively diagnosing machine failures and listening to and identifying music. The working systems in use today only address "narrow purpose" applications.

We believe the domains and applications that are primed to realize significant ROI from the application of advanced AI solutions have distinct characteristics. Based on our research and consulting work, we believe there is a discernible set of attributes that characterize those segments and applications where the impacts from new AI tools will be higher and more straightforward to achieve and where the user's propensity to adopt new tools, methods and approaches is also higher.



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Domains with applications that contain diverse equipment and systems that have over many years been subject to continuous and multiple measurements, where the capital cost of the equipment tends to be high and where the economic impact of the equipment and systems "in-use" is high and where fractional improvements or cost optimization will yield significant business results. In these applications, users traditionally have understood the value of monitoring and collecting data. These markets and opportunities are typically more "mission critical" in nature.

Additionally, domains and applications where customer data is actively collected sets the stage to combine these data sets with adjacent applications to address new opportunities such as customer prediction analytics. New opportunities are emerging all over the economic landscape to fuse very large data sets with new sensor readings and measurements such as combining weather forecasts and legacy weather models with new sensors on vehicles that take real time road condition measurements to help large fleet owners better optimize the use of their trucks.

In order for developers to provide appropriate tools and services and users to effectively justify the significant investment in AI capabilities, identifying and aligning the tools with the intended use cases and applications will be critical. **Access The Full Insight:** Click Here

Imec and CEA-Leti join forces on Artificial Intelligence and Quantum Computing

LEUVEN (BELGIUM), November 19, 2018 — During the state visit of His Excellency Emmanuel Macron President of the French Republic, the Belgian research center imec and the French research institute CEA-Leti, two world-leading research and innovation hubs in nanotechnologies for industry, announced that they have signed a memorandum of understanding (MoU) that lays the foundation of a strategic partnership in the domains of Artificial Intelligence and quantum computing, two key strategic value chains for European industry, to strengthen European strategic and economic sovereignty. The joint efforts of imec and CEA-Leti underline Europe's ambition to take a leading role in the development of these technologies. The research centers' increased collaboration will focus on developing, testing and experimenting neuromorphic and quantum computing – and should result in the delivery of a digital hardware computing toolbox that can be used by European industry partners to innovate in a wide variety of application domains – from personalized healthcare and smart mobility to the new manufacturing industry and smart energy sectors.

Edge Artificial Intelligence (eAI) commonly refers to computer systems that display intelligent behavior locally on the hardware devices (e.g chips) . They analyze their environment and take the required actions to achieve specific goals. Edge AI is poised to become a key driver of economic development. And, even more importantly perhaps, it holds the promise of solving many societal challenges – from treating diseases that cannot yet be cured today, to minimizing the environmental impact of farming.

Decentralization from the cloud to the edge is a key challenge of AI technologies applied to large heterogeneous systems. This requires innovation in the components industry with powerful, energy-guzzling processors.

"The ability to develop technologies such as AI and quantum computing – and put them into industrial use across a wide spectrum of applications – is one of Europe's major challenges. Both quantum and neuromorphic computing (to enable artificial intelligence) are very promising areas of innovation, as they hold a huge industrialization potential. A stronger collaboration in these domains between imec and CEA-Leti, two of Europe's leading research centers, will undoubtedly help to speed up the technologies' development time: it will provide us with the critical mass that is required to create more – and faster – impact. and will result in plenty of new business opportunities for our European industry partners," says Luc Van den hove, president and CEO of imec.

"Two European microelectronics pioneers today are joining forces to raise the game in both high-performance computing and trusted AI at the edge, and ultimately to fuel European industry success through innovations in aeronautics, defence, automobiles, Industry 4.0 and health care," said Emmanuel Sabonnadière, CEA-Leti CEO said. "This collaboration with imec following earlier innovation-collaboration agreements with the Fraunhofer Group for Microelectronics of the Fraunhofer-Gesellschaft, the largest organization for applied research, will focus all three institutes to the task of keeping Europe at the forefront of new digital hardware for AI, HPC and Cyber-security applications."

Imec and CEA-Leti are inviting partners from industry as well as academia to join them and benefit from access to the research centers' state-of-the-art technology with proven reproducibility – enabling a much higher degree of device complexity, reproducibility and material perfection while sharing the costs of precompetitive research.

About imec -- Imec is the world-leading research and innovation hub in nanoelectronics and digital technologies. The combination of our widely acclaimed leadership in microchip technology and profound software and ICT expertise is what makes us unique. www.imec-int.com.

ADLINK to Showcase Carrier-grade Network Security Platform and Latest AI Training Platform at Edge Computing Congress 2018

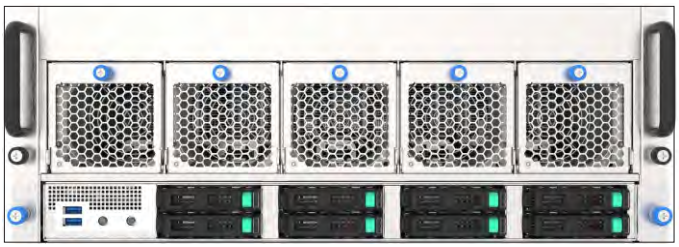
As a premier supplier to the telecom and network markets, ADLINK delivers high performance platforms offering I/O density and scalability, enabling customers to build solutions meeting the demands of next-generation, high-end application scenarios

Mannheim, Germany | 05-Sep-2018

ADLINK Technology, Inc., a global provider of advanced Edge Computing products, will demonstrate its carrier-grade network security platform CSA-7400 and latest AI training platform ALPS-4800 at Edge Computing Congress from Sept. 18 - 20 in Berlin. In addition, ADLINK's Xavier Serra, telecom and networking business development manager and subject matter expert, will present on MEC Solutions for Different Vertical Markets: NFV/SDN, 5G, Smart Cities and IIOT on Sept. 19 at 3:20PM.

ADLINK's CSA-7400 is a next-generation, high performance, carrier grade COTS network security platform built on the Open Compute Carrier-grade Edge Reference Architecture (OCCERA) by ADLINK, integrating network interfaces, switches, and overall computing capacity. The CSA-7400's flexibility and configurability enables cross-business product deployment and easy integration to other high-end network security markets, such as next-generation firewalls, telecommunications, and Multi-access Edge Computing (MEC). Featuring high throughput capacity and I/O density, parallel computing and computing density, carrier-grade high availability, and support for standardized API management, the application-ready CSA-7400 meets the stringent requirements for network security systems, and enhances solution integrators' competitive positions by allowing them to focus their development efforts on differentiating end applications.

4U 19'' Network Appliance
CSA-7400 Click Here



AI Training Platform
ALPS-4800 Click Here

ADLINK's ALPS-4800 is the company's latest AI training platform, validated with up to 8 NVIDIA® Tesla® P100/V100 accelerators in a 4U server design, providing more than just a hardware server system. Rather, the ALPS-4800 is an optimized, workload-conscious acceleration system for Machine Learning (ML), Deep Learning (DL) and High Performance Computing (HPC) applications for smart factory, smart city, mobile robotics, defense, medical, and digital security and surveillance (DSS). Integrating a server node powered by dual Intel® Xeon® Scalable processors and PCIe expansion box with PCIe switching, the ALPS-4800 platform is highly configurable and scalable to support the combination of NVIDIA GPUs required to meet the needs of a variety of applications, supporting different workloads and demands, multiple topologies and bandwidths between GPUs and CPUs with simple cable routing adjustments. Moreover, InfiniBand support allows the platform to be easily scaled up to multiple GPU clusters.

By leveraging more than 20 years of expertise in developing highly reliable and available embedded computing systems, ADLINK is a premier supplier of extensive, cost-effective COTS, as well as fast time-to-market ODM solutions to worldwide tier-one TEMs and network security integrators. ADLINK ensures best practices in product obsolescence and lifecycle management by leveraging its long-standing strategic partnerships with major processor and software vendors. ADLINK offers design services in every major geographic region, benefiting customers with increased responsiveness, short delivery lead-time and ease of doing business. ADLINK focuses on continued development to help customers effectively mitigate budget constraint, and smoothly and seamlessly take on technology migration and product integration.

Edge Computing Congress is a meeting point for global leading operators and vendors to discuss the most pressing topics of Edge Computing, covering 5G networks, cyber security, artificial intelligence, augmented and virtual reality, IoT and Industry 4.0. To schedule a meeting with the ADLINK team at the event, please contact Xavier Serra (xavier.serra@adlinktech.com).

About AI Index

Mission : Ground the conversation about AI in data.
The AI Index is an effort to track, collate, distill and visualize data relating to artificial intelligence.
It aspires to be a comprehensive resource of data and analysis for **policymakers, researchers, executives, journalists** and the general public to develop intuitions about the complex field of AI.

The AI Index Report

The AI Index is a starting point for informed conversations about progress in artificial intelligence. The report aggregates a diverse set of metrics, and makes the underlying data easily accessible to the general public. The AI Index Report is broken into 4 large sections:

Volume of Activity
The Volume of Activity metrics capture the "how much" aspects of the field, like attendance at AI conferences and VC investments into startups developing AI systems.

Derivative Measures
We investigate the relationship between trends. We also introduce an exploratory measure, the AI Vibrancy Index, that combines trends across academia and industry to quantify the liveliness of AI as a field.

Technical Performance
The Technical Performance metrics capture the "how good" aspects; for example, how well computers can understand images and prove mathematical theorems.

Towards Human Peformance
We outline a short list of notable areas where AI systems have made significant progress towards matching or exceeding human performance. We also discuss the difficulties of such comparisons.

The AI Index Report Steering Committee

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- Project Manager, Zoe Bauer

The AI Index was conceived within the ***One Hundred Year Study on AI*** (AI100). The AI Index was established as an independent project under the AI100 umbrella, now hosted at ***Stanford's Human-Centered AI Institute*** (HAI). We look forward to continuing a flourishing relationship with both the AI100 and HAI.

The AI Index gratefully acknowledges start-up funds provided by:

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Introduction to the AI Index 2018 Annual Report

We are pleased to introduce the AI Index 2018 Annual Report. This year's report accomplishes two objectives. First, it refreshes last year's metrics. Second, it provides global context whenever possible. The former is critical to the Index's mission — grounding the AI conversation means tracking volumetric and technical progress on an ongoing basis. But the latter is also essential. There is no AI story without global perspective. The 2017 report was heavily skewed towards North American activities. This reflected a limited number of global partnerships established by the project, not an intrinsic bias. This year, we begin to close the global gap. We recognize that there is a long journey ahead — one that involves further collaboration and outside participation — to make this report truly comprehensive.

Still, we can assert that AI is global. 83 percent of 2017 AI papers on Scopus originate outside the U.S. 28 percent of these papers originate in Europe — the largest percentage of any region. University course enrollment in artificial intelligence (AI) and machine learning (ML) is increasing all over the world, most notably at Tsinghua in China, whose combined AI + ML 2017 course enrollment was 16x larger than it was in 2010. And there is progress beyond just the United States, China, and Europe. South Korea and Japan were the 2nd and 3rd largest producers of AI patents in 2014, after the U.S. Additionally, South Africa hosted the second Deep Learning Indaba conference, one of the world's largest ML teaching events, which drew over 500 participants from 20+ African countries.

AI's diversity is not just geographic. Today, over 50% of the Partnership on AI's members are nonprofits — including the ACLU, Oxford's Future of Humanity Institute, and the United Nations Development Programme. Also, there is heightened awareness of gender and racial diversity's importance to progress in AI. For example, we see increased participation in organizations like AI4ALL and Women in Machine Learning (WiML), which encourage involvement by underrepresented groups.

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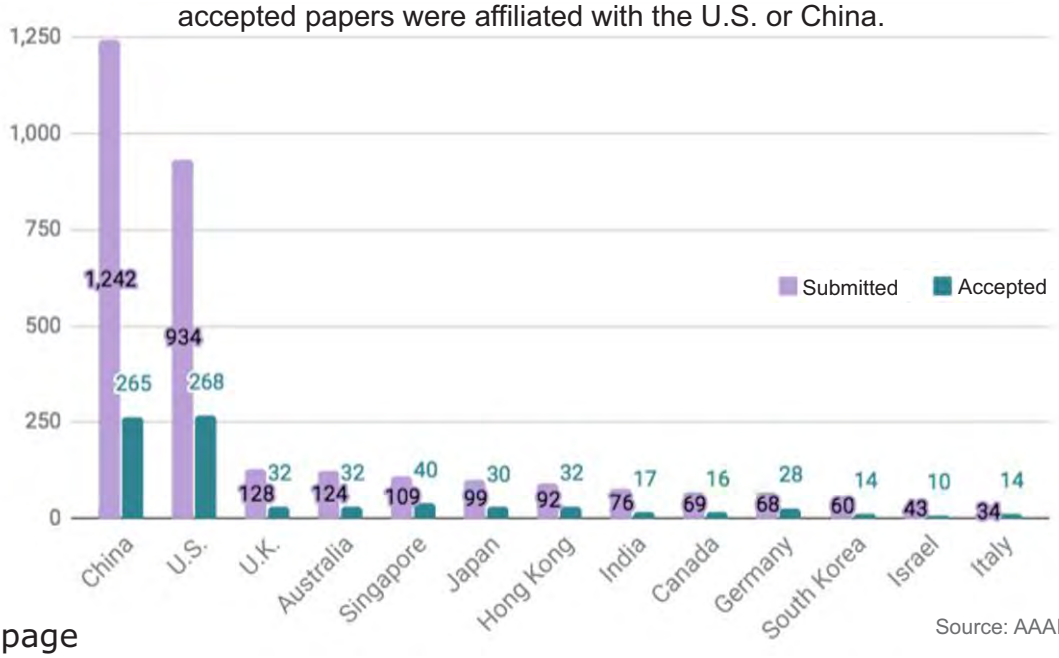
70% of AAAI papers are from the U.S. or China

At the 2018 AAAI conference, 70% of submitted papers and 67% of accepted papers were affiliated with the U.S. or China.



Source: AAAI

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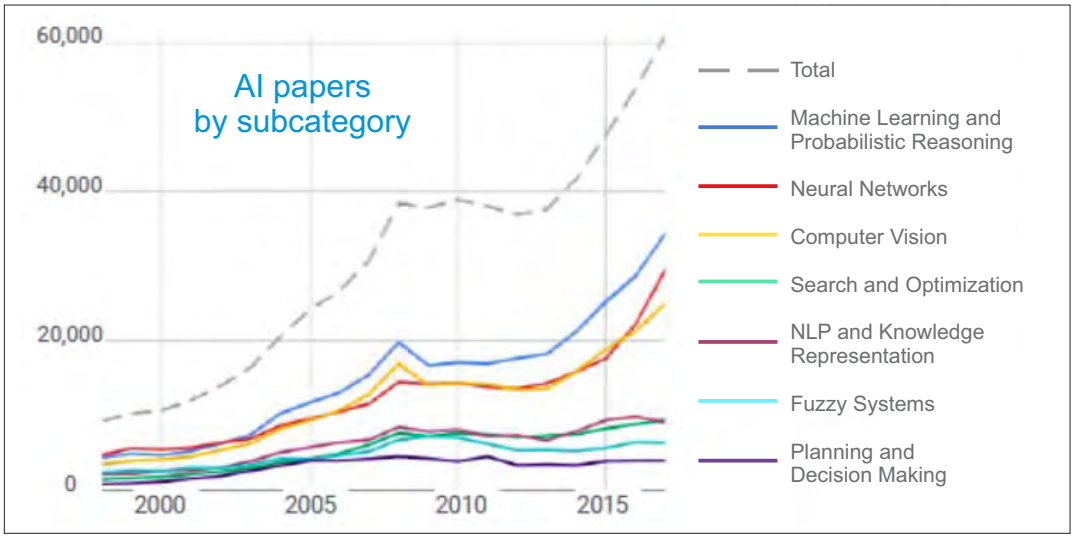
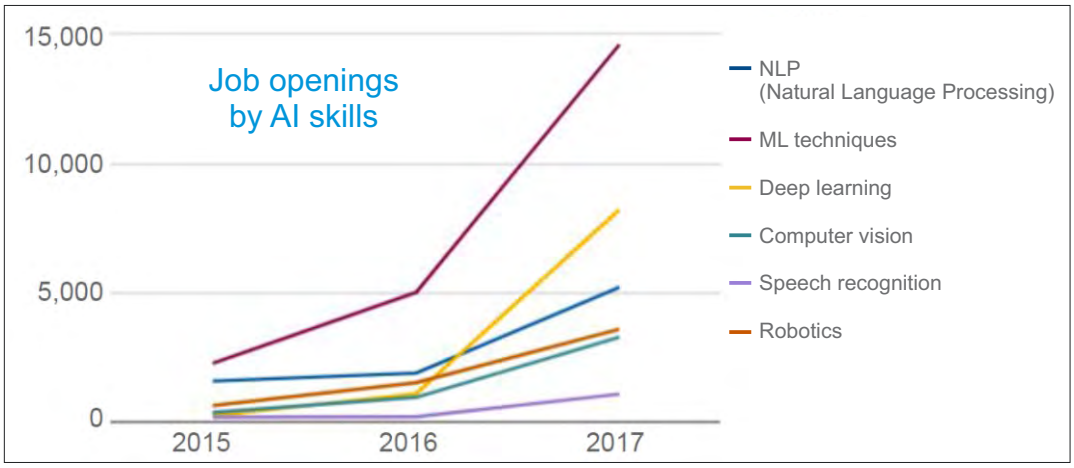
Number of AI papers on Scopus by subcategory 1998—2017

Source: Elsevier
(page 11 of report)
The number of Scopus papers on Neural Networks had a CAGR of 37% from 2014 to 2017



Job openings by AI skills required 2015 — 2017

Source: Monster.com
(page 33 of report)



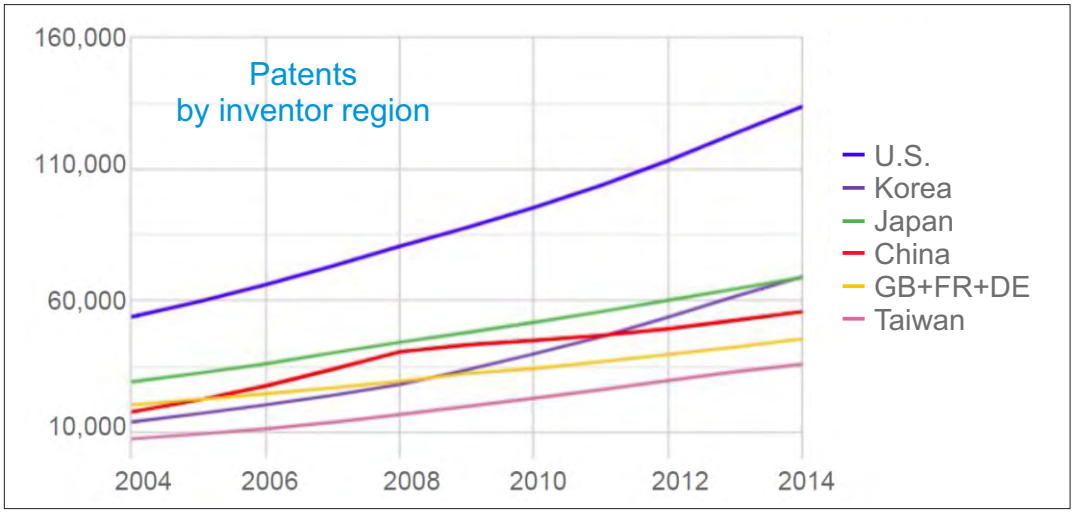
Patents by inventor region

Source: amplified
(page 35 of report)

AI patents were aggregated using IPC codes that fall into the Cognition and meaning understanding and Human-interface technology areas.

In 2014, about 30% of AI patents originated in the U.S, followed by South Korea and Japan, which each hold 16% of AI patents.

Of the top inventor regions, South Korea and Taiwan have experienced the most growth, with the number of AI patents in 2014 nearly 5x that in 2004.

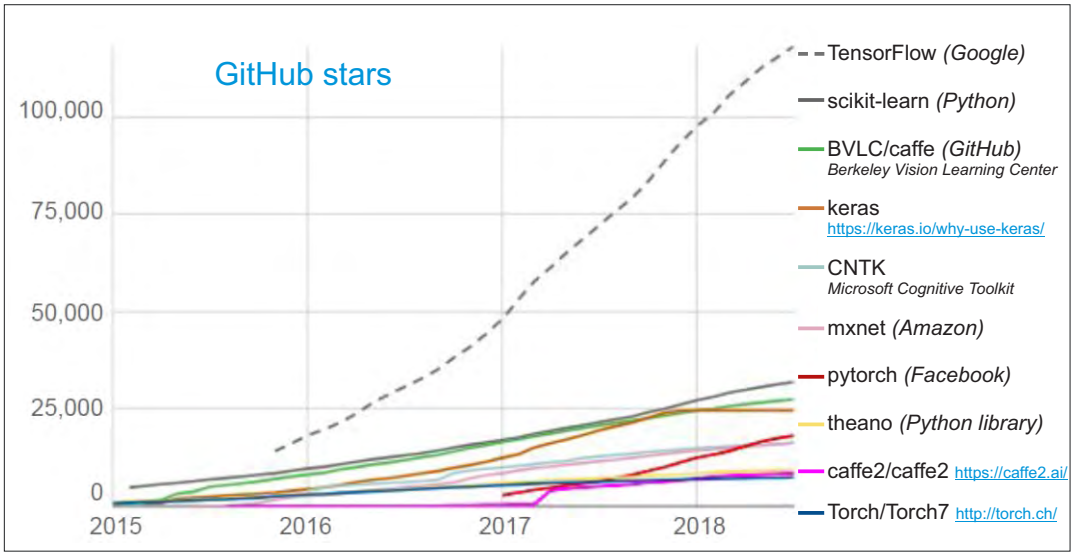


GitHub stars

Source: GitHub (page 42 of report)
Cumulative GitHub stars by AI library 2015—2018

The graphs below show the number of times various AI and ML software packages have been starred on GitHub. This provides a rough measure of the popularity of various AI-programming frameworks.

Two recent trends are the growing popularity of frameworks backed by major companies (i.e.,Tensorflow (Google), Pytorch (Facebook), mxnet (Amazon)), and the significant popularity of TensorFlow relative to other languages.



Download The 2018 AI Index Report

Spot Fake AI Companies Quickly
Look Out for the Fake AI Rebrand

Last updated on December 17, 2018, published by Daniel Faggella
Daniel Faggella is the founder and CEO at Emerj. Called upon by the United Nations, World Bank, INTERPOL, and many global enterprises, Daniel is a sought-after expert on the competitive strategy implications of AI for business and government leaders.

We've seen a lot of what we call "fake AI rebrands" in the last 18 months, and I suspect that as long as AI is a buzzword, we will only see more and more of this. Business leaders are going to have to keep their eyes peeled for these kinds of companies in their midst. A fake AI rebrand is a company that doesn't in fact leverage artificial intelligence in any meaningful way, but, nonetheless, rebrands their company around the concept of AI to seem like they're they're innovative. In this article, I'll talk about why companies might do this and which companies do this most frequently in this article. I'll also talk about exactly how to quickly vet AI companies to parse out the real ones from the fake ones. A lot of this article is based on our three rules of thumb for cutting through the AI hype, and so readers may want to check out that article in addition to this one.

Why Companies Fake AI Expertise

Lead Generation and Talent Acquisition

A lot of audiences associate artificial intelligence with being "hip," so to speak. AI is the new buzzword. Most business leaders don't really know what AI nor the companies that are actually doing it look like. As a result, they'll see website designs that might look like AI, with pictures of brains or the word "AI" plastered all over the site (like in the header image of this article), and they'll assume that the company must be legitimate in their claims. Many business leaders might be intrigued by this kind of branding, enough to get on the phone with the company and learn more about them. The branding is a lead generation tactic, but often it's nothing more.

In addition, job applicants might find the website because they're looking to work at places that are innovating. Since AI is the new buzzword, they might be looking to work at an AI startup. Again, most applicants, especially the non-technical ones, such as marketers or communications people, might just take the company's branding at face value and apply on the assumption that the company is legitimate in their claims.

Good Press

Companies might hype AI because it might get them a little bit of coverage. For example, they might be featured in a list of companies innovating in a certain sector. In reality, all the company did was write "AI" on their homepage, and all of a sudden they're getting mentioned in Forbes articles by people that are writing about AI who are well-intended but might not know how to vet a company that's really just pretending to do AI.

Future Plans to Leverage AI

The last reason why companies might lie about using AI is that they don't feel like they actually are. Oftentimes, companies will rebrand themselves as AI companies only when they have plans to use AI in the future, sometimes the near future. They want to generate excitement about their company on the assumption that they will be leveraging AI soon. The problem is that it takes a lot longer to overhaul your core processes for AI than the company leadership often presumes.

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Spot Fake AI Companies Quickly
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Artificial intelligence talent is remarkably expensive and hard to come by. If a company wants to find people with a robust background in data science and convince them to work for the company, it's going to take a while. One of the reasons it's so difficult to procure data science talent is the cultural differences between companies looking to do an AI rebrand and the tech giants, as we've outlined in our recent executive guide ***The AI Advantage of the Tech Giants: Amazon, Facebook, and Google.***

Companies looking to rebrand themselves can't presume that they can hire data scientists and that they will immediately get to work on AI as if it's that simple. There are two primary factors here at play that prevent something like this from being the case.
1.A company needs **subject-matter experts** and people within the company who have at least a conceptual understanding of data science. This is so they can hand problems off to the data scientists in a way that will allow them to get to work. People at the company need to be able to hear feedback from the data scientists and contribute to that conversation if any machine learning model is to be built that can actually solve specific business problems. Most companies are not investing in this kind of training for their subject-matter experts, and most companies trying to do an AI rebrand have existing employees with no understanding of even the concept that would allow a company to apply artificial intelligence.
2.IT personnel at the company also need to be able to understand the concepts of data science. When data scientists build a marketing tool with the help of the subject- matter experts in the marketing department, for example, IT people need to integrate that. They need to manage data infrastructure and the flow of data in entirely new ways.

These two factors require a cultural change to take place before embarking on an AI initiative, let alone an AI rebrand. As a result, when a company hires several PhDs with data science talent thinking they're going to be able to leverage machine learning right off the bat, they're probably going to lose those PhDs in the next three or four months. This is because the company won't know how to articulate problems to these data scientists, and they won't be able to build anything effective. They'll try and find work elsewhere, likely at a company that they know can provide them with meaningful work, such as Google or Amazon.

The fact of the matter is companies need to change their core products before they can call themselves an AI company. The company might have software that helps people keep track of inventory in a warehouse, but to be able to bake artificial intelligence or machine learning into that product is not an easy problem. Executives often underestimate how long that process is going to take and exactly how much cultural change needs to happen for that to occur.

Which Companies Fake AI Expertise?

From our experience, companies that fake AI rebrands are oftentimes those founded sometime in the '80s or maybe the early 2000s when AI and machine learning were really not that interesting. These are often IT services-oriented companies that are now all of a sudden AI experts despite having dealt with regular software for over a decade. Older technology companies often do the same thing.

These companies are usually somewhere between 30 and 300 people large. This is because it's harder for larger, more established firms to do this because everyone already knows them for something else. In addition, what they're doing is already working, so there's no reason to shock customers by going through a major rebrand in terms of product and services. As such, in general, smaller IT and technology firms are those most likely to undergo the AI rebrand. They may not have had the kind of dominating success that larger firms had with their services, and so they believe that saying they do AI, even if they're **lying**, might make them more appealing to customers or garner them press.

How to Spot Fake AI Rebrands Quickly

Look at Their Talent

One of the primary ways to figure out if a company has undergone a fake AI rebrand is to look at the talent and staff at the company. What often is the case at these companies is they will have maybe one data science person on staff who is formally trained at least to some degree. That's one person out of around 300. There is a very low ratio of data science talent other talents within the company, and this is a useful signal for determining if a company has undergone an AI rebrand. That said, some companies have ways of fluffing those ratios, and so one can't stop there.

Companies can fluff their talent ratios by hiring several data scientists, but oftentimes those data scientists are brand new at the company. If a company has six AI personnel out of 100 people at the company, and those six people have been employed at the company for an average of five years, then we can assume the company is in some active way leveraging AI in their product. Oftentimes, the companies that fake AI rebrands will so them when they've hired one data scientist and they've been at the company for three months. Some data science person's been there for three months. Three months isn't enough time to go from a company that doesn't do AI to one that does, especially when there's only one data scientist at the company. These companies do the rebrand first and the hiring second.

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Also, examine the talent that the company does hire. People can **fake their AI expertise on LinkedIn**. Although that talent might call themselves a data scientist on LinkedIn, they might have just gotten out of undergrad two years ago. Perhaps they studied English literature and the last company they worked for was Starbucks. That's an extreme example, but we've seen it happen. Companies will sometimes encourage their new hires to call themselves data scientists or data analysts on LinkedIn to try and fool people who would go and vet them into thinking that they actually employ a robust team of experienced data science and AI personnel, when in fact they don't.

Similarly, sometimes those who call themselves data scientists at a company will have been regular programmers working with code that isn't useful for AI. They don't have evidence of experience working with machine learning at past companies nor evidence of academic backgrounds in AI. What happens is these fake AI rebrand companies just call these people machine learning engineers.

In order to further vet the talent at a purported AI company, look at the leadership. Search for the head of AI or data science at the company and see if they have PhDs in data science, AI, computer science, applied math, or hard sciences like physics. If they don't have that, check to see if they've worked at Google, Amazon, Facebook or another AI powerhouse for three or four years. These are the people who are most likely capable of AI and leading data science teams.

We've seen a company take entry-level employees who are akin to marketing analysts and change their titles to "data analyst" all at once. The company then looked like they employed many data scientists, but what they've really done is pull people fresh out of undergrad with various degrees and called them data analysts to make themselves seem legitimate.

Look at Their Case Studies

After we've taken a look at talent, we also want to take a look at case studies. One thing I really want to make clear here is that the time it takes from an existing company to say they're doing artificial intelligence to then actually be applying artificial intelligence in their product can be anywhere from 18 – 36 months. It takes a long time for a company to actually bake AI into their existing products. If they have an existing software solution, the likelihood of AI overhauling that product and adding tremendous value to that product six months after the company makes a data science hire is very low.

Oftentimes, when a company blasts out a press release, "We have this AI product. We do amazing things with our AI product," that means that within 18 – 36 months, there's a small chance that AI will be part of their product. A lot of business leaders will presume that the press release means that the company is doing AI, but that isn't the case.

Case studies are a way to figure out if a company is leveraging AI at present. In a case study, we want to see clear evidence of what artificial intelligence is doing and how it's bringing value to the application. A lot of the time a fake AI rebrand company will say that they're leveraging AI to help their clients, but when one goes to look at their case studies, all of their them mention the same product they've had for the last 10 years. There really isn't any mention of data, of training algorithms, of applying artificial intelligence. One might see some success stories, which are great, but the company talks about how important AI is to their strategic advantage on their homepage despite the fact that their case studies have nothing to do with artificial intelligence. This indicates a low likelihood that the company is leveraging artificial intelligence.

The fact of the matter is for these companies AI is probably not gonna be part of the product for maybe years to come, and companies like to lie about it and pretend like it's possible for them today. That's what marketing departments have to do, but business leaders should not let themselves be fooled by this. They should look at the case studies.

Look at How They Present Their Value Proposition

If a company has artificial intelligence on their homepage and all of the pictures of brains and neural networks, but one can't figure out on their product page or their LinkedIn page where artificial intelligence is being applied to the problem the company is claiming to solve, then it's likely they don't know either.

Companies that are actually using AI know how to say what they're doing. The **marketing** space is full of companies claiming to do AI that don't have the talent to back up their claims. A **MarTech** company might claim that artificial intelligence can automate your marketing campaigns, but that doesn't actually explain anything.

What we want to look for is the following:

1. What are the software's inputs?
2. What is the software doing with the input?
3. What is the software's intended result?

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Spot Fake AI Companies Quickly
Look Out for the Fake AI Rebrand

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A marketing AI company that is likely be leveraging AI might hypothetically say:

We work with fashion brands who sell clothing. We take our historical database of related purchases across all the fashion brands that we work with, and we help companies to determine the recommended products that they should suggest next to other products. We help them with email promotion for recommended purchases and checkout promotion for recommended purchases. We do that by finding commonalities in products and helping companies suggest the kinds of products that are most likely to get added to cart and increase that revenue for every transaction, what is called "cart value." We take the past historical data of related purchases, look at the purchasing behavior of customers, what products were purchased in the same cart with other products, what products were purchased in quick succession with other products, and we use that to determine which products should be suggested to which other products. We take ongoing data from what customers are doing and how they're responding to our offerings, and we use that to update our model and continuously suggest better, tighter, and more related products per each individual user for both email promotion and for checkout promotions. Our job is to increase cart value.

I'll run through the list for the above example:

1. What are the software's inputs? Purchase data from other client companies and the user company that is buying the software

2. What is the software doing with the input? Determining which products correlate well with which other products for a purchase under which circumstances

3. What is the software's intended result? Improving cart value

Now, I want to make it very clear. If a company articulates a very strong case for its software's inputs, what it does, and its intended result, it doesn't mean that the company is doing AI. Refer to the talent on the company's team for the strongest evidence that a company is or isn't leveraging AI. That said, business leaders will want to look at these descriptive factors as well. If all the company says are high-level buzzwords, the company is very likely faking their AI expertise because the company themselves likely doesn't know what their purported AI does in their product.

Concluding Thoughts on Fake AI Rebrands

In summation:

1. Look at the talent.

2. Look at the case studies.

3. Look at how they describe their value proposition.

If a company has great talent, case studies that clearly show what artificial intelligence is doing in their product, and an explanation of how AI works into their value proposition on their website, that company might actually be doing AI.

I really hope that these tips end up being useful for business leaders in terms of sussing out the fake Ai companies from the real. I want to make clear, however, that we've never advised people to work with companies on the basis of them doing AI. It's misguided to search for an AI company to solve one's business problems just because they're doing AI. We don't want people to make decisions based on those criteria. If the ROI is high, if the evidence of results is higher, that is generally how business leaders should make their decisions.

There are some applications like **machine vision for medical diagnostics** that necessarily require AI, but we advise against looking at, say, a marketing company and assuming that what they're doing is better or more powerful than another company just because they say they're doing AI. Many of these companies have gone through a fake AI rebrand. That said, they might have a great track record of servicing business problems in which case, we can call them out on their claims to leveraging AI, but ultimately, if they have a record of success, they still might be worth buying from. Business leaders should not get the idea that they should be looking solely for AI vendors to solve their business problems; they should work with those companies that can drive them the highest ROI regardless of if those companies use AI or not.

Header Image Credit: Towards Data Science

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The Forrester Wave™: Multimodal Predictive Analytics And Machine Learning Solutions (PAML), Q3 2018

The 13 Providers That Matter Most And How They Stack Up

September 5, 2018 | By Mike Gualtieri, Kjell Carlsson, Ph.D. with Srividya Sridharan , Robert Perdoni , Aldila Yunus

Why Read This Report

In our 24-criteria evaluation of multimodal predictive analytics and machine learning (PAML) providers, we identified the 13 most significant ones — Dataiku, Datawatch, FICO, IBM, KNIME, MathWorks, Microsoft, RapidMiner, Salford Systems (Minitab), SAP, SAS, TIBCO Software, and World Programming — and researched, analyzed, and scored them. This report shows how each provider measures up and helps enterprise application development and delivery (AD&D) leaders make the best choice.

Key Takeaways

SAS, IBM, And RapidMiner Lead The Pack
Our research uncovered a market in which SAS, IBM, and RapidMiner are Leaders; KNIME, SAP, Datawatch, TIBCO Software, and Dataiku are Strong Performers; FICO, MathWorks, and Microsoft are Contenders; and World Programming and Salford Systems (Minitab) are Challengers. All included vendors have unique sweet spots that continue to satisfy enterprise data science teams.

Data Science Teams Want To Shed Their Math Nerd Image
In 2012, Harvard Business Review asserted that data scientist is "The Sexiest Job Of The 21st Century." But being "sexy" without being "social" is to fritter away opportunity. Data scientists get this. That's why they want PAML solutions that also serve the many collaborators in an enterprise needed to bring their good work to production applications.

Multimodal PAML Solutions Are Flush With New Innovation
It was a very good year for multimodal PAML vendors. After years of incremental, ho-hum innovation, Forrester sees some bright lights: reimagined data science workbenches, collaborations tools designed for non-data scientist enterprise roles, hopped-up automation, and some enticing road maps for next year.

MULTIMODAL PAML SOLUTIONS REIMAGINE HOW DATA SCIENCE TEAMS WORK

Machine learning is an elemental core competency that every enterprise must have. The reasons are many. Machine learning gives enterprises the power to predict. It is a fundamental building block to AI. It can learn from data and find hidden insights. Most importantly, it can make even the hugest of enterprises gain the agility of disruptive upstarts by injecting scalable intelligence into hyperpersonalized customer experiences, business processes, operational applications, and employee decisions. None of this happens, though, without businesspeople, data scientists, data engineers, software developers, and AI engineers working together. That's where enterprise predictive analytics and machine learning solutions for data science teams and their friends are necessary. Forrester defines enterprise PAML as:

Software that provides enterprise data scientist teams and stakeholders with 1) tools to analyze data; 2) workbench tools to build predictive models using statistical and machine learning algorithms; 3) a platform to train, deploy, and manage analytical results and models; and 4) collaboration tools for extended enterprise teams, including businesspeople, data engineers, application developers, DevOps, and AI engineers.

"Multimodal" Is One Of Three PAML Segments Identified By Forrester

The focus of this Forrester Wave™ is on evaluating multimodal PAML solutions. This is one of three market segments identified in the " Now Tech: Predictive Analytics And Machine Learning Solutions, Q2 2018 " Forrester report. We define these segments as follows:

• **Multimodal PAML solutions provide the widest breadth of workbench tools.** These solutions offer multiple user-interface paradigms and the broadest set of workbench tools, such as graphical user interfaces (GUIs), configuration wizards, automation, and coding environments. Many of these solutions also provide tools for non-data scientists to build data pipelines, create machine learning models, and collaborate with data science teams. This PAML market segment is what we have evaluated in this Forrester Wave.

• **Notebook-based PAML solutions favor a code-first approach.** Notebook-based PAML solutions provide workbench tools centered on coding in R, Python, and other programming languages using open source Jupyter or a proprietary interface that makes coding more efficient. The vendors in this segment add significant, differentiated features, such as environment provisioning, project management, deployment, model management, visualization tools, and more. Forrester has evaluated notebook-based PAML solutions in a separate Forrester Wave evaluation. (see endnote 2)

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• **Automation-focused PAML solutions help non-data scientists build models.** This segment focuses on tools to automate the steps in the model-building life cycle. Automation-focused solutions enable data scientists and non-data scientists to build models by configuration instead of coding and specifying each step in a data science pipeline. Some multimodal and notebook-based vendors offer automation as well, but they also offer other approaches to building models and thus are not exclusively included in this automation-focused segment. The vendors in this category focus specifically on an automation approach to machine learning. Forrester plans a separate Forrester Wave evaluation of this subsegment in 2019.

THE FUTURE OF PAML IS THE THOUSAND-MODEL VISION

The importance of data science cannot be overstated. It is the electricity of artificial intelligence, the butterfly effect of the insights-driven business, and the chemical reaction of scalable intelligence across the enterprise. Today, enterprises use machine learning models to identify customer churn, suggest upsell/cross-sell, reroute logistics bottlenecks, predict manufacturing machine failure, and make other predictions. A few models here and there are valuable and significant, but they are a mere drop in the bucket compared to what is possible. Enterprises have dozens, hundreds, and even thousands of applications and business processes that could, but do not currently, benefit from predictive models. That is the thousand-model vision that enterprise data science teams must rise to in the next two years. Multimodal PAML solutions vendors must help them get there by:

• **Supporting the needs of much larger teams and the larger community.** Most enterprise data science teams are small and organizationally dispersed. They often struggle to deliver data science initiatives on a repeated basis, especially for projects with new stakeholders or that involve new use cases. (see endnote 3) To support the explosion of enterprise use cases, teams need to get bigger and, simultaneously, PAML tools need to support these teams as well as the larger community of businesspeople, data engineers, software developers, and AI engineers. In five years, we expect extended data science teams will become bigger than software development teams.

• **Making automation the first step in the data science life cycle.** Today, only in our imaginations can data science teams churn out and maintain thousands of models. They need to in reality, though. The data science life cycle based on variations of the now decades-old CRISP-DM process is too sequential and too manually iterative to dramatically boost productivity. Massive machine learning automation is the future of data science because it will make data science teams exponentially more productive. (see endnote 4) Automation-focused PAML vendors are leading the way, but multimodal and notebook-based vendors also provide varying degrees of automation. PAML vendors must make automation so good and natural that it becomes the first step that a data science team takes when working on a new project, rather than the novelty that it is today.

• **Integrating with software development and continuous integration tools.** Data scientists regularly complain that their models are only sometimes or never deployed. (see endnote 5) A big part of the problem is organizational chaos in understanding how to apply and design models into applications. But another big part of the problem is technology. Models aren't like software code, because they need model management. And models must make it into applications. Data science teams — and therefore PAML solutions — must play nicely with application development teams and the tools that they use to design, develop, and deploy applications.

• **Keeping up with open source innovation.** Data science teams need quick access to open source innovation, such as deep learning, that drives new enterprise use cases and delivers the thousand-model vision. Multimodal PAML vendors must make new open source libraries or newer versions of existing libraries available and abstracted within the workbench, almost as soon as they are released. Many teams that use multimodal PAML solutions are forced to also use a notebook-based solution to get quick access to these open source libraries. Switching tools and learning new programming languages is a productivity killer.

MULTIMODAL PAML SOLUTIONS EVALUATION OVERVIEW (see graphic next page)

To assess the state of the multimodal PAML solutions market and see how the vendors stack up against each other, Forrester evaluated the strengths and weaknesses of top vendors. After examining past research, user need assessments, and vendor and expert interviews, we developed a comprehensive set of 24 evaluation criteria, which we grouped into three high-level buckets:

• **Current offering.** Each vendor's position on the vertical axis of the Forrester Wave graphic indicates the strength of its current offering. Key criteria for these solutions include workbench, model operations, algorithms, architecture, and business solutions.

• **Strategy.** Placement on the horizontal axis indicates the strength of the vendors' strategies. We evaluated each vendor's ability to execute, solution road map, implementation support, pricing and acquisition, and partners.

• **Market presence.** Represented by the size of the markers on the graphic, our market presence scores reflect each vendor's customer adoption, evaluated product revenue, and market awareness.

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Evaluated Vendors And Inclusion Criteria

Forrester included 13 vendors in this assessment: Dataiku, Datawatch, FICO, IBM, KNIME, MathWorks, Microsoft, RapidMiner, Salford Systems (Minitab), SAP, SAS, TIBCO Software, and World Programming. Each of these vendors (see Figure 1 in the full report):

• **Is identified as a multimodal PAML solution.** Forrester has determined that all evaluated vendors offer a multimodal PAML solution, as defined in the "Now Tech: Predictive Analytics And Machine Learning Solutions, Q2 2018" Forrester report. (see endnote 6) Vendor solutions that we've identified as notebook-based PAML or automation-focused PAML solutions are not included. In some cases, vendors offer distinct PAML solutions that are included in more than one segment.

• **Offers a comprehensive, differentiated multimodal PAML solution.** Vendors included in this evaluation must offer a solution that can operate on large data sets; provide capabilities for data acquisition and preparation; and provide statistical and machine learning algorithms, a differentiated user interface to build models, and model management features. If a vendor offers a PAML based in whole or in part on open source, the vendor must have value-added differentiation; for example, a business intelligence (BI) or database vendor that includes the ability to run R scripts or Python is not included in this Forrester Wave.

• **Markets a standalone multimodal PAML solution at enterprise data science teams.** Forrester included only solutions that are marketed toward enterprise data science, AI engineers, and/or app development teams that use machine learning algorithms to analyze data and create predictive models. We did not include any PAML solutions that we deem are technologically embedded in any other particular application, such as a BI, data preparation, or ETL application, or a middleware stack. (see endnote 7 in the full report)

• **Meets our install base and revenue requirements.** Included vendors have at least four paying, named enterprise customers using the PAML solution. Vendors also provided Forrester with three customer references who agreed to fill out a confidential survey and/or a participate in a telephone interview. Included vendors also had a trailing 12-month revenue of at least $4 million.

• **Has sparked client inquiries and/or has market momentum.** Forrester clients often discuss the vendors and products through inquiries; alternatively, the vendor may, in Forrester's judgment, warrant inclusion or exclusion in this evaluation because of technology trends, market presence, or lack of client interest or vendor momentum.

See the full Report

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