Getting the Most Out of AI in 2021:

Insights From 10+ Industry Trailblazers

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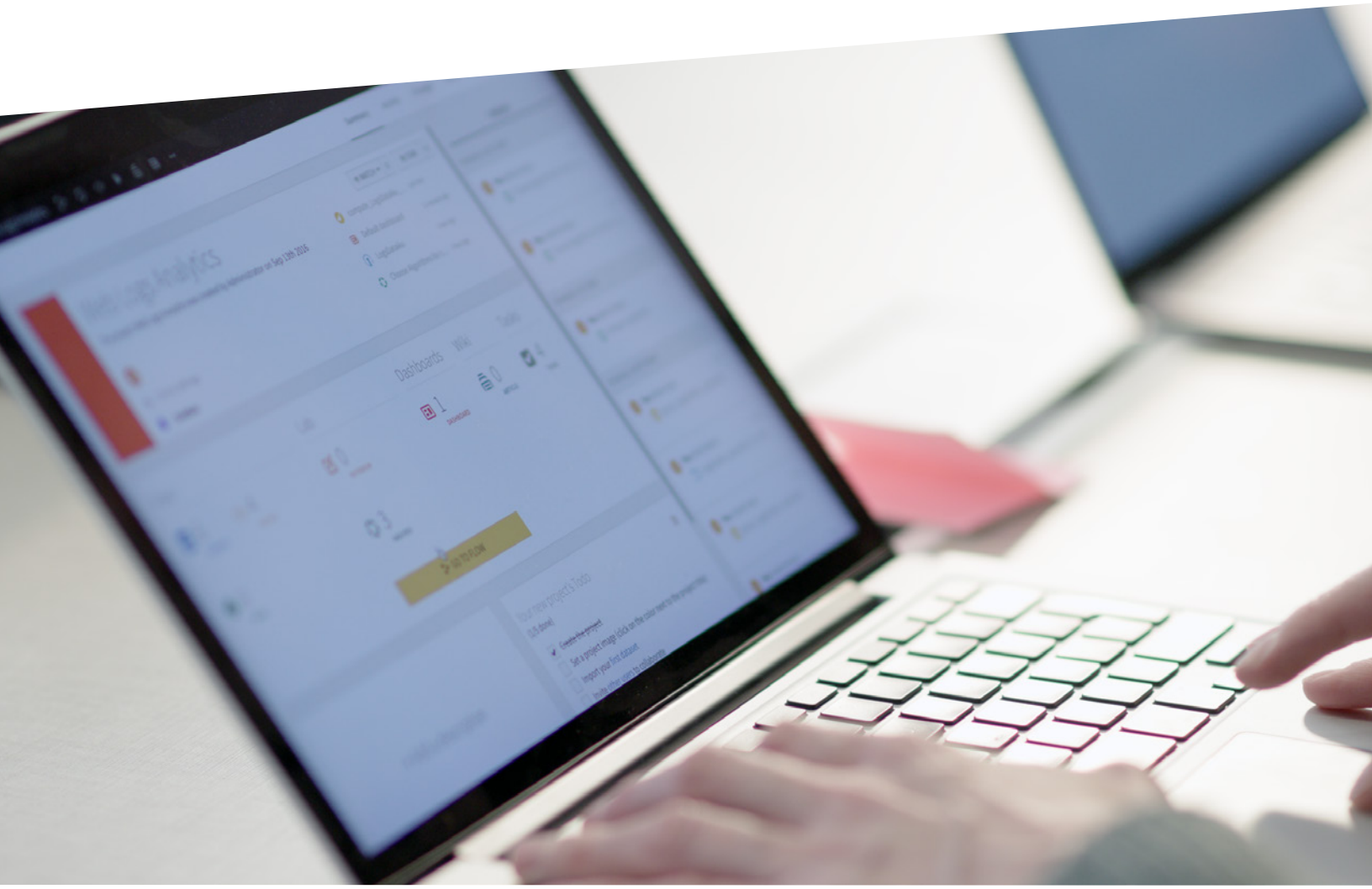
Introduction

To say 2020 was tumultuous might even be an understatement. The global health crisis brought uncertainty and challenges to people and businesses throughout the year and the critical need for core concepts that have always been part of our DNA at Dataiku — such as collaboration, agility, and responsibility — reverberated across the data science community and reinforced their necessity in 2021 and beyond.

While times of economic disruption and change impact many aspects of how organizations operate, they certainly have not diminished the impact AI is having (and will continue to have until it becomes completely ubiquitous). To help organizations continue to deftly pivot and keep pace in an ever-evolving world, we compiled qualitative commentary from a diverse range of experts — both from technical and non-technical roles — on key learnings from 2020, opportunities for 2021, barriers preventing AI adoption, notable use cases, and more.

It is our hope that this helpful feedback from industry trailblazers, Dataiku partners, and Dataiku in-house subject matter experts doesn't just equip you with firsthand insights on what to anticipate in the new year. While still a goal, we also hope it helps humanize the trajectory of data science, machine learning, and AI so you can more effectively inform decisions, share knowledge, and accelerate your organization's journey to Enterprise AI, from big-picture strategy to hands-on implementation.



Contributors

Léo Dreyfus-Schmidt
Research Director, Dataiku

Léo Dreyfus-Schmidt is a mathematician and holds a Ph.D. in pure mathematics from University of Oxford and University of Paris VII. After five years focusing on homological algebra and representation theory in Paris, Oxford, and the University of California - Los Angeles, he joined Dataiku where he has been developing solutions for predictive maintenance, personalized ranking systems, price elasticity, and natural language applications. Léo is a bicycle and food aficionado (separately), so in his spare time, you'll find him either zipping around Paris rain or shine or enjoying a great meal somewhere.

Vincent Houdebine
Senior Data Scientist, Dataiku

Vincent is a senior data scientist at Dataiku in New York. He supports organizations in building valuable data science projects and deploying them into production. In the past few years, he has been dealing with a variety of operational data science and machine learning problems, from fraud detection to churn prevention and product recommendations, as well as research topics like compression of neural networks. Prior to joining Dataiku, Vincent was the CEO of a computer vision startup.

Triveni Gandhi
Data Scientist, Dataiku

Triveni is a data scientist at Dataiku. She works with clients to determine best practices around data science and their specific projects. Previously, she worked as a data analyst with a large non-profit dedicated to improving education outcomes in New York City. Triveni holds a Ph.D. in Political Science from Cornell University.

Claire Gubian
Director of Customer Value, Dataiku

Claire leads the business value practice at Dataiku. She works with clients to determine what business value they create thanks to data science and Dataiku in particular. She also shares best practices to help accelerate and scale the business impact of data science at the enterprise level. Previously, Claire spent most of her 15+ years career in management consulting and financial services (PayPal, Mastercard). She is now based in New York City.

Walter Aldana
VP Business Development, Dataiku

Walter is VP of Business Development at Dataiku where he is in charge of our most important partnerships at Dataiku on a global basis. Walter was most recently at Snowflake where he created the entire alliance's global organization. He led the strategy, GTM initiatives, and execution leading to a major impact in sales, product development, and marketing. He saw Snowflake grow from pre-GA to an organization supporting many thousands of customers. Previously, Walter led leadership roles at Cisco Security and Webroot Software. He was also a venture capitalist at H.I.G. Capital and a consultant at Boston Consulting Group. He holds a master's of engineering and a bachelor's in computer science and electrical engineering from MIT and an MBA from Stanford Business School.

Brandeis Marshall
Chief Executive Officer, DataedX

Brandeis Marshall helps rising and experienced working professionals interpret the racial, gender, and socioeconomic impact of data in technology. Twice named one of 200 Black women in tech to follow on Twitter, Brandeis is a skilled explainer who has a knack of making difficult computing and data concepts easier to understand, regardless of a person's educational background.

A thought leader in broadening participation in data science, Brandeis often discusses inclusivity and equity for organizations like DataCamp, Dataiku, Experian, NeurIPS, and Truist. She has appeared in Medium, OneZero, and The Moguldom Nation. Brandeis shares her approaches to effectively amplify social contexts within data and its implications for all communities.

Brandeis is a teacher and advisor at heart. She holds a Ph.D. and Master of Science in Computer Science from Rensselaer Polytechnic Institute and a Bachelor of Science in Computer Science from University of Rochester. Dr. Marshall brings nearly 15 years experience in higher education. She was the first Black woman to receive tenure at Purdue University College of Technology. Still in academia, Brandeis regularly teaches software development, data, and analytics topics.

David Ryan Polgar
Founder of All Tech Is Human

David Ryan Polgar is a pioneering tech ethicist who paved the way for the hotly-debated issues around regulating speech on social media, AI ethics, unintended consequences, digital wellbeing, and what it means to be human in the digital age. He has appeared on CBS This Morning, TODAY show, BBC World News, Fast Company, SiriusXM, Associated Press, LA Times, USA Today, and many others. An international speaker with rare insight into building a better future with technology, David has been on stage at Harvard Business School, Princeton University, The School of the New York Times, TechChill (Latvia), The Next Web (Netherlands), FutureNow (Slovakia), and the Future Health Summit (Ireland).

David is the founder of All Tech Is Human, an organization aimed at accelerating tech consideration, increasing methods of participation and onboarding people into the Responsible Tech ecosystem. In September 2020, the organization released its "Guide to Responsible Tech: How to Get Involved & Build a Better Tech Future" which is aimed at inspiring the next generation of responsible technologists and changemakers.

David is a frequent consultant and tech commentator, advocating for greater collaboration between industry and civil society, more interdisciplinary approaches to solving thorny tech/society issues, and better aligning technology with our individual and societal interests. In March, David became a founding member of TikTok's Content Advisory Council (US), providing expertise around the delicate and difficult challenges facing social media platforms to expand expression while limiting harm. He is also an advisory board member for the Technology and Adolescent Mental Wellness (TAM) program and co-host of the podcast Funny as Tech, a show about our messy relationship with technology.

Dr. Kristof Schum
Global Segment Leader of Machine Learning, AWS

Kristof has been with Amazon for five years and leads the AWS AI/ML partner ecosystem. Coming from a small Hungarian city, Pécs, he first joined Roland Berger Strategy Consultants, then he went to the U.S. to obtain his MBA from Wharton. After that, he joined Amazon as a product manager and launched the company's first global-selling recommendation engine. At Amazon, Kristof completed 16 different machine learning research projects as part of the Machine Learning University and teaches ML4PMs and recommender systems.

Shams Khan
Data Scientist, Capgemini

Shams has an academic background in physics and statistical learning. Along with the more traditional methods, he specializes in geospatial data processing, deep learning, and computer vision. He has contributed to a number of data science use cases across a range of industries including fashion, retail, energy and infrastructure. His work is focused around developing rapid proof of concepts and prototypes for unique problems using advanced data science methods, helping a business visualize the benefit and structure of a complete solution.

Tian Zhang
Managing Consultant, Capgemini

Tian has a background in systems engineering and enterprise architecture and over the last decade has formed the opinion that primary causes of failure in ambitious programs are not poor solutioning or implementation, but that rigorous engineering is necessary but ultimately insufficient to drive change. He now advises organizations on the intersection of corporate strategy (which markets do we compete in?), business strategy (how do we achieve and sustain an advantage?) and functional strategy (how can analytics help?).

Mitra Azizirad
Corporate Vice President, Microsoft AI & Innovation Marketing, Microsoft

Mitra Azizirad is the Corporate Vice President for Microsoft AI and Innovation where she is responsible for driving the perception of Microsoft's AI and future technologies, for defining and accelerating the productization of Microsoft's portfolio of innovation, and for leading marketing and storytelling in support of AI and Innovation thought leadership. Mitra leads Microsoft's vision to help individuals and organizations put AI into action to innovate, transform, and deliver lasting positive impact on people, industry, and society at large.

A 28-year veteran of Microsoft, she has held key leadership positions at Microsoft across a wide array of technical, marketing and sales functions, both in the field and corporate. Prior to Microsoft, Mitra held technical leadership positions at the World Bank, National Association of Securities Dealers (NASD/NASDAQ), and International Telecommunications and Satellite Organization (Intelsat).

Tarik Dwiek
Director of Technology Alliances, Snowflake

Tarik has spent over 20 years in the high technology industry spanning software development, sales, and business development. Prior to Snowflake, Tarik managed strategic partnerships at AWS and EMC and also spent more than 12 years at EMC selling to enterprise accounts and leading the technology strategy for EMC's global accounts.

Nathan Mannheimer
Senior Product Manager, Advanced Analytics, Tableau

Nathan is a product manager in the Augmented Analytics organization at Tableau focused on integrating data science tools and technologies into the Tableau platform. He is a lecturer in the Statistics Department at the University of Washington working on the Data Science Masters Program.

Rajat Sinha

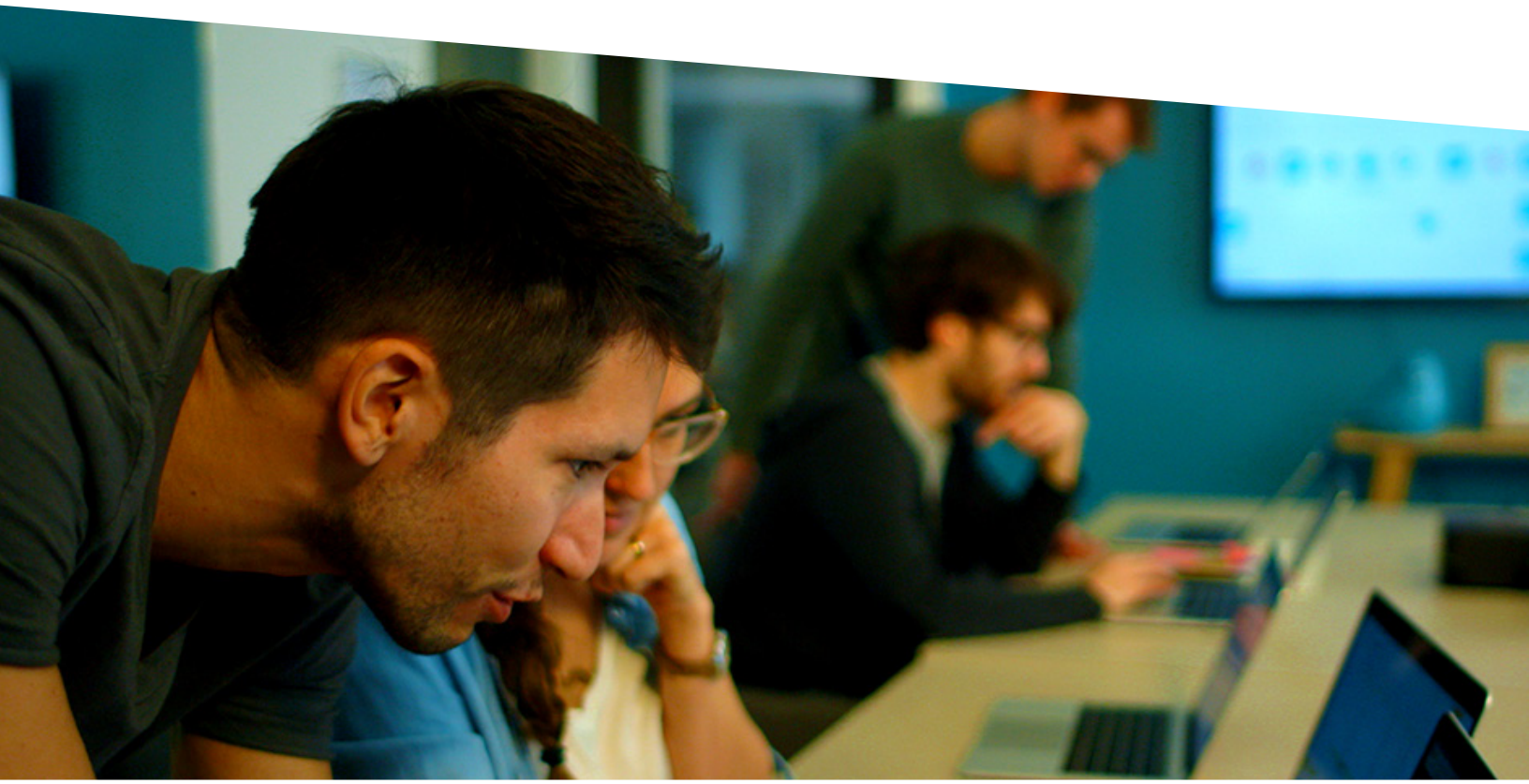
Global Head of Partnerships and Alliances, Data Analytics & AI, Wipro Limited

Rajat is a technology executive with a history of success in data analytics & AI with a focus on alliances, sales, business development, and customer engagement. He is a critical thinker with demonstrated success in applying technology to create customer-centric, value-added marketing and operations business solutions. He is a leader and mentor who bridges cultural and geographic barriers in building teams that achieve results.

Vivek Karmakar

Consulting Partner, Data Science and AI, Wipro Limited

Vivek is a data science practitioner with 20 years of experience in solution consulting across retail, consumer goods, telecom, and automotive industries. He has worked with organizations like PwC Consulting, IBM, and Dunnhumby in both India and the U.S. He is currently engaged with Wipro and is responsible for solution design for analytics and AI solution areas. Vivek spent most of his professional career on machine learning solutions around personalization, loyalty marketing, demand and inventory management, merchandising, and pricing and promotions areas. He completed his master's degree in statistics from Indian Statistical Institute. Vivek is based out of Kolkata, India.



What ML Technology or Technique Are You Most Excited to Explore in 2021?

According to Gartner, "In 2021, AI augmentation will create **$2.9 trillion of business value** and 6.2 billion hours of worker productivity. As AI technology evolves, augmented intelligence — combined human and AI capabilities — will deliver the greatest benefits."[1]

As the AI market continues to mature, not only will this notion of creating AI systems to enhance (not replace) humans continue to reign true, but it will continue to pave the way for ML techniques and technologies and enable technical stakeholders to push the envelope when it comes to their day-to-day functions. These experts are looking forward to getting their hands dirty when it comes to things like generative language models, object and depth detection, and untapping new ways to use models to improve decision making.

"Causal inference! Because machine learning is only concerned with predictions and not with actions, this will get AI closer to real decision making." *- Léo Dreyfus-Schmidt, Research Director, Dataiku*

"Generative language models like GPT-3 are opening a new range of possibilities for automatic text generation. For example, GPT-3 was used to generate HTML code based on plain language specifications." *- Vincent Houdebine, Senior Data Scientist, Dataiku*

"I look forward to the development of federated learning systems as they offer an opportunity to train models on sensitive data without exposing the privacy of the user." *- Triveni Gandhi, Data Scientist, Dataiku*

"I'm most curious about AI-driven biometrics and the implications of it for Black people. AI-driven biometrics techniques can learn quite a bit from the lessons of facial recognition." *- Brandeis Marshall, Chief Executive Officer, DataedX*

"I have worked on various computer vision problems over the last couple of years, such as image classification and image similarity detection. In 2021, I am looking to take this a step further and delve into the techniques used to process video footage in the realm of robotics and automation. I am specifically looking to learn more about the various object and depth detection techniques being used currently." *- Shams Khan, Data Scientist, Capgemini*

"Model fitting and AutoML are largely solved problems in the machine learning for analytics space. As a result, the technologies I am most excited to see mature in 2021 are tools that support the expansion of the base of analysts that can effectively fit and utilize ML models in analysis and decision making processes. These tools will need to place modeling workflows in business contexts to democratize model building and free up core data science teams to focus on deeper, high impact problems. A core part of this process will involve deeper integrations between model building tools and visual analytics software, like Tableau, that are essential to business decisions today." *- Nathan Mannheimer, Senior Product Manager, Advanced Analytics, Tableau*

"There is a significant increase in the application of ML technologies across structured, textual, images, and video data for driving intelligent decision automation. However, I feel there is significant value-add for businesses through augmented intelligence applications, where humans are assisted by AI-driven systems. I think we will see a lot more application of graph and search-based technologies to drive information-assisted decision making. It has the potential for quicker time to implement with influence beyond one or two use cases and with the capability to leverage much wider data assets than being used in current ML applications." *- Vivek Karmakar, Consulting Partner, Data Science and AI, Wipro Limited*

[1] *Gartner, Leverage Augmented Intelligence to Win With AI, June 2019*

What Is the Most Interesting AI or ML Application You Saw Implemented in 2020?

While 2020 was markedly unique with regard to its impact on the data science, ML, and AI space because of the global health crisis, many organizations have taken it as a valuable lesson learned — any time of disruption (new technology, economic downturn, environmental disaster, new competition, to name a few) can cause irreversible and damaging effects if there's no plan in place that allows for agility and survival.

As companies aim to recover and understand their new market dynamics, it remains critical to implement AI systems that are persistent and resilient during times of economic flux. Below, you'll see that stakeholders were captivated by GPT-3, alternative data sources for enriched insights during times of uncertainty, and making headway with unlabeled data.

"I'd have to say it's a toss up between GPT-3 and PULSE (Duke University). The debates about the value of these applications are very polarizing given the real-life value turns out to be minimal and perpetuates discrimination. It will be interesting to witness how the discussions will unfold. Validation of either tech will be an uphill battle." *- Brandeis Marshall, Chief Executive Officer, DataedX*

"All the models that are able to detect deep fakes or fight adversarial examples. As AI models get better and better at imitating humans, it is necessary to have models that would prevent them from tricking us." *- Vincent Houdebine, Senior Data Scientist, Dataiku*

"Probably not 2020-specific, but the impressive results of semi-supervised learning matching supervised learning benchmarks opens interesting perspectives for learning with not a lot of labeled data." *- Léo Dreyfus-Schmidt, Research Director, Dataiku*

"I was extremely impressed by the newest release of the Generative Pre-trained Transformer model (GPT-3). It is a deep learning model used to generate written text similar to a human. I have read some of the articles produced by the model and on multiple occasions failed to distinguish 'fake' articles from real ones. It pushes the limits of the current computational capabilities to build something incredible and I am very excited to see the next iteration of the model." *- Shams Khan, Data Scientist, Capgemini*

"The most interesting ML application I saw this year was the integration of dynamic simulation models into interactive dashboards. These tools allowed business users to ask questions and explore new scenarios in real-time, greatly expanding the degree to which people outside of data science teams can explore the world." *- Nathan Mannheimer, Senior Product Manager, Advanced Analytics, Tableau*

"AI has traditionally been used in retail, BFS, and HLS industries. We are seeing an increasing and interesting number of cognitive applications in transportation, energy, manufacturing, and public / government sectors. There is also an increasing usage of data from IoT sensors, documents, geo-spatial data, and data sourced from the internet for varieties of AI applications.

However, the pandemic shifted focus towards COVID-19-related AI applications for the second half of the year. The use cases were around contact tracing leveraging geo-location data generated by devices, simulating rental recovery patterns for shopping malls, predicting locations with the likelihood of encountering blood supply shortfall and planning for proactive blood collection camps, and how best to repurpose employees to extend their services to understaffed hospitals and nursing homes during the pandemic as a humanitarian act." *- Vivek Karmakar, Consulting Partner, Data Science and AI, Wipro Limited*

Is There an AI/ML Use Case You Worked on This Year That Stuck Out to You for a Specific Reason? What Was so Interesting About It?

We hear a lot about the fairly well-known AI use cases such as fraud detection, churn prevention, and recommendation systems. However, in order to not limit expectations or capabilities (especially moving into 2021), it's important to remember that AI is constantly evolving and manifesting in other ways, across industries and teams.

Given that **87% of data science projects never make it into production**[2], it seems fitting that two experts cited the challenge of operationalizing models to garner real-world value. Further, it's no surprise to hear about model drift monitoring, particularly as **MLOps practices** continue to gain traction across the enterprise. Lastly, given 2020's global reckoning of racial inequity, we expect to continue to see data practitioners aim to debunk bias, unfairness, and racism in AI systems.

"Model drift monitoring was another interesting application of machine learning. It's also a good sign of the industry gaining in maturity as this shows more and more ML models are deployed in production." *- Léo Dreyfus-Schmidt, Research Director, Dataiku*

"A project to match customer support tickets with appropriate technical documentation. The project is not the hardest from a pure data science or machine learning point of view, but the deployment in production is the challenging part as the model needs to be able to explore a massive knowledge database in near real time.

What is interesting is that it has a direct impact on the business and creates a lot of value for support engineers, not by replacing them but by making them more efficient. In general, this project showcases the emerging need for data scientists to not only be able to train models but also deploy and integrate them in a broader system and business process." *- Vincent Houdebine, Senior Data Scientist, Dataiku*

"I enjoyed testing new methods to address inequality in health and finance datasets, such as new weighting and sampling techniques. These methods highlighted the built-in unfairness in much of the data we use and reinforced the point that data and machine learning are not inherently neutral." *- Triveni Gandhi, Data Scientist, Dataiku*

"No use cases that I worked on but rather that worked me — chatbots. With a pandemic, our world changed suddenly. As folks were not answering phones and emails, I relied on chatbots to handle some many activities with regard to travel, banking, etc. Learning how to ask questions took a little practice and once I understood, it was off to the races."
- Brandeis Marshall, Chief Executive Officer, DataedX

"I was involved in a Capgemini global data science competition where the aim was to build a computer vision model to identify sperm whales. The model would be used to speed up research and support conservation efforts, so it was great to be involved in something tangible with real-world impacts. Also, I thoroughly enjoyed the research into state-of-the-art deep learning algorithms such as siamese/triplet networks that allowed us to tackle a problem of that nature."
- Shams Khan, Data Scientist, Capgemini

[2] *https://venturebeat.com/2019/07/19/why-do-87-of-data-science-projects-never-make-it-into-production/*

"The most impactful AI/ML problems I worked on this year related to bridging the last-mile problem of operationalizing models into business processes. These cases were critical to the success of the overall modeling projects because, although they did not involve the specifics of the models in question, they related to how to technically and organizationally integrate models into business thinking and decisions. Without this critical last step, the value and effort spent analyzing and modeling the data would be lost." - Nathan Mannheimer, Senior Product Manager, Advanced Analytics, Tableau

"The value of external data. A global insurance company, predominantly into personal and commercial insurance, was making losses due to not-so-optimal pricing decisions. They have started incorporating OpenStreetMap features like distance from fire station, railways etc. into their home insurance risk assessment algorithms resulting in improved pricing and significant improvement in loss ratios." - Vivek Karmakar, Consulting Partner, Data Science and AI, Wipro Limited

How to Accelerate AI Value: A Non-Technical Lens

What Are You Most Excited About With Regard to Data Science in 2021?

Organizations worldwide are committed to Enterprise AI efforts from the top down, but struggle to democratize projects from the bottom up to give more individuals access to actionable data insights (and, in turn, embolden them to use data in their day-to-day decisions).

Data science has the capacity to generate long-lasting impacts and it's important to recall that it's not only data executives and practitioners that help drive those impacts on a daily basis — eventually, those on the periphery will be leveraging data in an organic way. The common thread among the answers below is this notion that data can be used to facilitate societal progress, spark innovation, and give more people a seat at the table.

"What excites me most about data science in 2021 is that we are now recognizing the significance that the field has on us as individuals and society at large. The attention is finally here. We are beginning to grasp that data science as a field needs to be more diverse, inclusive, and multidisciplinary. Data science touches so many aspects of our modern life, so it behooves us as a society to be more thoughtful about our technological development and deployment. Looking at 2021, I am excited about all of the new voices that are coming to the forefront and look forward to the ways we can be more intentional about data science." - David Ryan Polgar, Tech Ethicist and Founder of All Tech Is Human

"I am excited to see the new wave of AI applications that get developed next year. With more data, more users, and more powerful machine learning and AI commercial tools, customers will be in a very unique position to come up with even more powerful data models to better predict what's most important to them with crisper levels of precision. That's going to be pretty exciting to see!" - Walter Aldana, VP Business Development, Dataiku

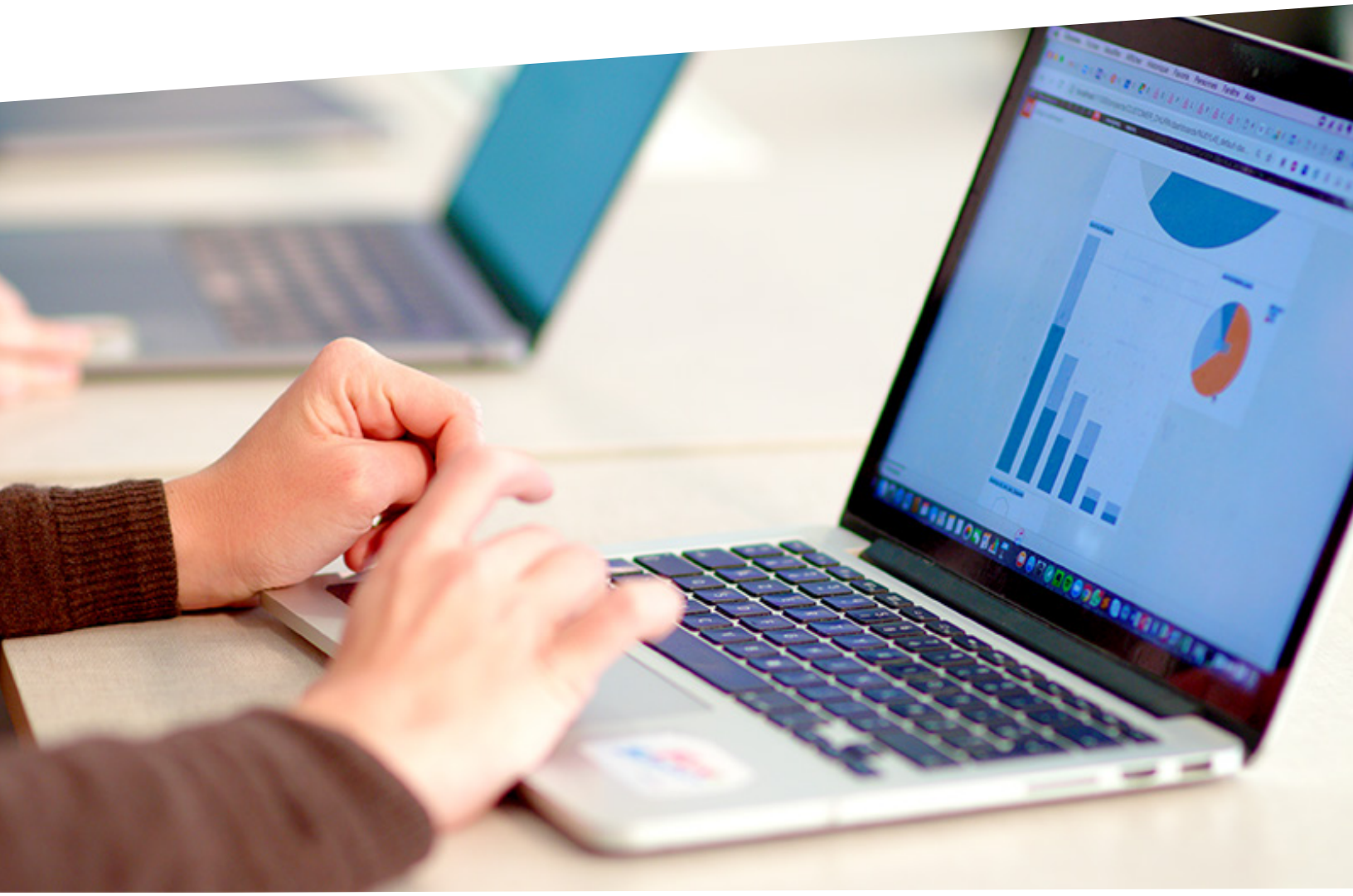
"Disruptions in 2020 will not be contained to 2020. We are looking forward to working with clients in 2021 to help them develop the flexibility that analytics enables to adapt and thrive. These developments will be a mixture of both optimizations (doing existing things better) as well as innovations (doing completely new things)." - Tian Zhang, Managing Consultant, Capgemini

"I am most excited about connecting the dots in recent technology achievements. Powerful pre-trained models, computer vision at the edge, MLOps, 5G, spatial computing, and low-code environments – just to name a few. Making machine learning easier and embedded with its full power into low-code environments is a particular area of interest for 2021.

I am convinced and excited that we will innovate with AWS partners along making these achievements accessible to non data scientists, too. Developing together with leading partners such as Dataiku, I am excited to build few-click solutions with drag, drop, tune, deploy, and monitor experiences for use cases ranging from as simple as making forecasting more accurate to as complex as empowering contact centers, factories, or hospitals with a suite of ML capabilities." *- Kristof Schum, Global Segment Leader of Machine Learning, AWS*

"Macro-economic conditions have changed in 2020. Business models have gone through massive disruption. All sectors of the economy have been affected. While 2020 provided an initial jolt to the economy and our way of living/working globally, these new market conditions will give rise to an untapped opportunity for companies to adopt. The opportunity: Training their analysts to become citizen data scientists.

Imagine the possibilities and outcomes of empowering grassroot-level analysts with the right toolkits and frameworks to take their Statistics 101 skills and bring it to use to drive shareholder value for the enterprise in a sustainable, governed and collaborative manner. The increasing adoption of predictive analytics and machine learning platforms in 2021 will be a catalyst to drive enterprise AI adoption in 2021." *- Rajat Sinha, Global Head of Alliances and Partnerships, Data Analytics & AI, Wipro Limited*



In Your Opinion, What Is the Key Barrier to AI Adoption Organizations Face?

Key barriers to AI adoption frequently fall into one of the following buckets: financial and regulatory, organizational and attitudinal (think people or processes), or technological (or a combination of issues spanning all three). In a benchmarking survey of 1,200 **data executives** conducted in September 2020, the top financial and regulatory challenge in adopting AI was regulatory constraints (42%), organizationally it was issues with implementation and project management (45%), and technologically the top challenge had a tie — acquiring, preparing, and integrating data across the enterprise and a lack of IT infrastructure to facilitate AI implementation (both with 28%).

The insights below reinforce that sometimes the simplest oversights cause residual delays in adoption, such as never establishing or straying from the business objective, failing to evaluate what will really make an impact before diving in headfirst, and not breaking down data silos to streamline the data-to-insights process.

"AI is not just a tech play, it requires profound transformation from an organization, particularly from a people and process perspective. Companies need to break the existing silos between analytics, business, and IT teams and align these key stakeholders around a common AI vision and roadmap. Many forget that AI's main goal is solving business problems." - *Claire Gubian, Director of Customer Value, Dataiku*

"Enabling an AI-ready culture will be very critical to accelerate AI adoption within organizations. Cultivating the right internal mindset is essential to driving success with AI. Garnering support from the top of the organization, making AI accessible, and upskilling every employee will foster new forms of collaboration and insights that help accelerate AI adoption. An AI-ready culture taps the creativity of all your teams — not just the technical roles, and it starts with data at the center of decision-making. An AI-ready culture enables all employees to take part in the innovation process by contributing. And when anyone can contribute ideas and ask questions, that means that every layer of the organization is represented. Fostering an inclusive approach like this leads to more diverse ideas and ultimately better solutions. Based on our own cultural journey at Microsoft, this is fundamental, and we're sharing our learnings and approach in our AI Business School.

Bringing AI to every employee will be very critical to accelerate AI adoption within organizations. Most companies are still experiencing AI in silos where it is only available to data scientists or highly technical developers for custom and complex uses. But we believe, to truly realize the full potential of AI, it's essential to bring the power of AI to everyone. Our solutions help every type of employee — from business roles, to developers, to field engineers, or data scientists in ways that are relevant and meaningful to their daily work. With ready to go, off-the-shelf products you can use today, no-code, low-code tools, and advanced tools for precise customization, we offer options that enable anyone in your organization to use and create AI based on their unique needs and capabilities and that leads to faster AI adoption. When you democratize AI for all, you open new paths for innovation and embolden your teams to turn their visions into reality. -Mitra Azizirad, Corporate Vice President, Microsoft AI & Innovation Marketing, Microsoft" - *Mitra Azizirad, Corporate Vice President, Microsoft AI & Innovation Marketing, Microsoft*

"Sophisticated technology does not always translate to a competitive advantage. Currently, barriers to adoption of AI are not of technical implementation (i.e., how do we build something?), but applicability and relevance to the organization (i.e., what do we want to achieve?). The challenge to adoption will be one of educating, and being educated by, the business — to share the art of possibility to jointly determine the worthwhile changes, and in some cases, changes necessary to the organization." *- Tian Zhang, Managing Consultant, Capgemini*

"Time and time again, customers are struggling with data management challenges that are caused by silos of data that have been built up through the last few decades (i.e. if it's a big enterprise that has made multiple acquisitions and built a bunch of different systems). We see that they're spending up to 80% of the time trying to find and integrate the data instead of extracting the gems of value hidden in this data. This is slowing down or preventing them from achieving that disruptive transformation so that they can innovate and gain market share. To me, these are the challenges that Snowflake and Dataiku were built to solve." *- Tarik Dwiek, Director of Technology Alliances, Snowflake*

"In my opinion, the barriers to AI adoption are around:

- ***Creating a sound AI strategy showcasing ROI on execution***
- ***Finding skilled workers at the cross section of business and technology to execute on the defined AI strategy***
- ***Governing, managing and collaborating on the data and the models to scale the AI programs***

All three barriers can be overcome by having the right strategy across people, processes, technology, and data." *- Rajat Sinha, Global Head of Alliances and Partnerships, Data Analytics & AI, Wipro Limited*

How Has the Enterprise AI Game Changed in 2020?

To truly achieve Enterprise AI, organizations need to embed machine learning methodology into the very core of their business to bring lasting value. No matter the industry, effectively scaling and employing Enterprise AI (a process that takes time!) is an organizational asset pivotal to the success of businesses of the future — fundamental in helping teams find and infuse more efficiency, business opportunities, and speed-to-value.

While 2020 was certainly rocky, it forced organizations to take a long, hard look at their current data and analytics strategy (including any models in place) to make sure they're resilient during moments of disruption. Robust AI implementation now and moving forward will improve organizations' ability to adapt to the world around them.

"In 2020, there has been an increased focus to help organizations make sense of the disruptions, rather than optimization and fine-tuning of business operations. This meant establishing blended business and technical teams working to a weekly cadence. Hopefully, this closeness will continue to develop going forward in 2021 as organizations see analytics not as a reactive reporting tool, but a forward-looking one that can facilitate experimentation and exploration; to better understand opportunities and organizational risk." *- Tian Zhang, Managing Consultant, Capgemini*

"First, a multi-cloud strategy is becoming more standard because customers want to remain independent and avoid lock-in as they leverage the major cloud providers. Cost optimization is another big one, as companies want to understand how to use the cloud most effectively and manage the cost of that usage. They're building this appetite for consuming applications as a service because they want to pay for just the resources that they use, so they want to be able to adjust to that demand without having to over or under provision.

Another trend is that customers want secure and governed access to data. Now that the cloud is opening up the ability to manage data at scale, these customers see both the opportunity and the critical need to enable data governance at scale. And, of course, leveraging AI and machine learning in the cloud. If organizations can achieve those cost and scale optimizations for capturing and managing all of their data, they can start to realize the full potential of AI and machine learning at enterprise scale." *- Tarik Dwiek, Director of Technology Alliances, Snowflake*

"Year 2020 saw the adoption and acceptance of Enterprise AI into the mainstream. Be it with the growth of:

- ***Natural language processing in traditional industries to drive better customer service (an increasing use of chatbots – eg: the chatbot "Erica" at Bank of America.)***
- ***The autonomous vehicle becoming more of a reality (Eg: Waymo moves from an autonomous ride hailing service to expand into freight hauling.)***
- ***Hyper-personalization and richer recommendation engines across platforms online and in our home devices (Google Nest, Alexa, Apple Watch)***

The ability to have machines change our quality of life has just started and will continue to accelerate over the next few years. It is important to make sure Enterprise AI is implemented with ethical practices in mind." *- Rajat Sinha, Global Head of Alliances and Partnerships, Data Analytics & AI, Wipro Limited*

Conclusion

According to the IDC, global spending on AI is slated to double over the next four years, growing from just over $50 billion in 2020 to **more than $110 billion in 2024.**[3] This reinforces the notion that organizations will continue to implement AI across various facets of their business until it is completely and organically embedded into their overall strategy and regularly helps drive agility, innovation, and value at scale.

Regardless of where your organization is in its digital transformation and journey to Enterprise AI, we hope that these learnings will be useful to you and your teams in building responsible and explainable AI solutions. As you work to continue to solve complex business problems, maintain a competitive edge in the digital age, and deliver valuable insights that will permeate throughout your organization, you can (and should) aim to:

- Democratize the use of data, putting it in the hands of many, not the elite few
- Infuse agility and elasticity so you can easily monitor and adjust models as needed in times of economic volatility
- Leverage collaborative tools that are responsible, governable, and free of unintended bias

[3] *https://www.idc.com/getdoc.jsp?containerId=prUS46794720*

data iku

Your Path to **Enterprise AI**

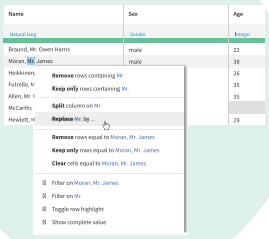
Dataiku is one of the world's leading AI and machine learning platforms, supporting agility in organizations' data efforts via collaborative, elastic, and responsible AI, all at enterprise scale. Hundreds of companies use Dataiku to underpin their essential business operations and ensure they stay relevant in a changing world.

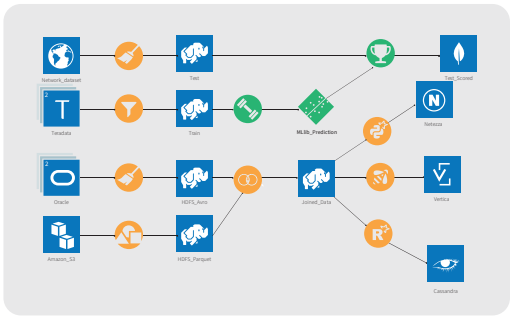
300+
CUSTOMERS

30,000+
ACTIVE USERS

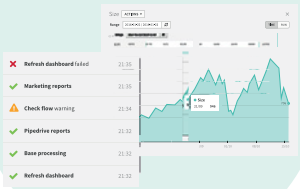
*data scientists, analysts, engineers, & more

1. Clean & Wrangle



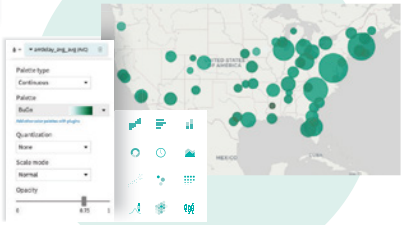


5. Monitor & Adjust

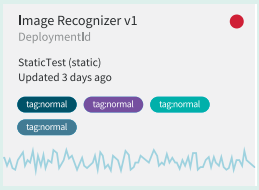


2. Build + Apply Machine Learning

3. Mining & Visualization



4. Deploy to production



BOOKLET

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