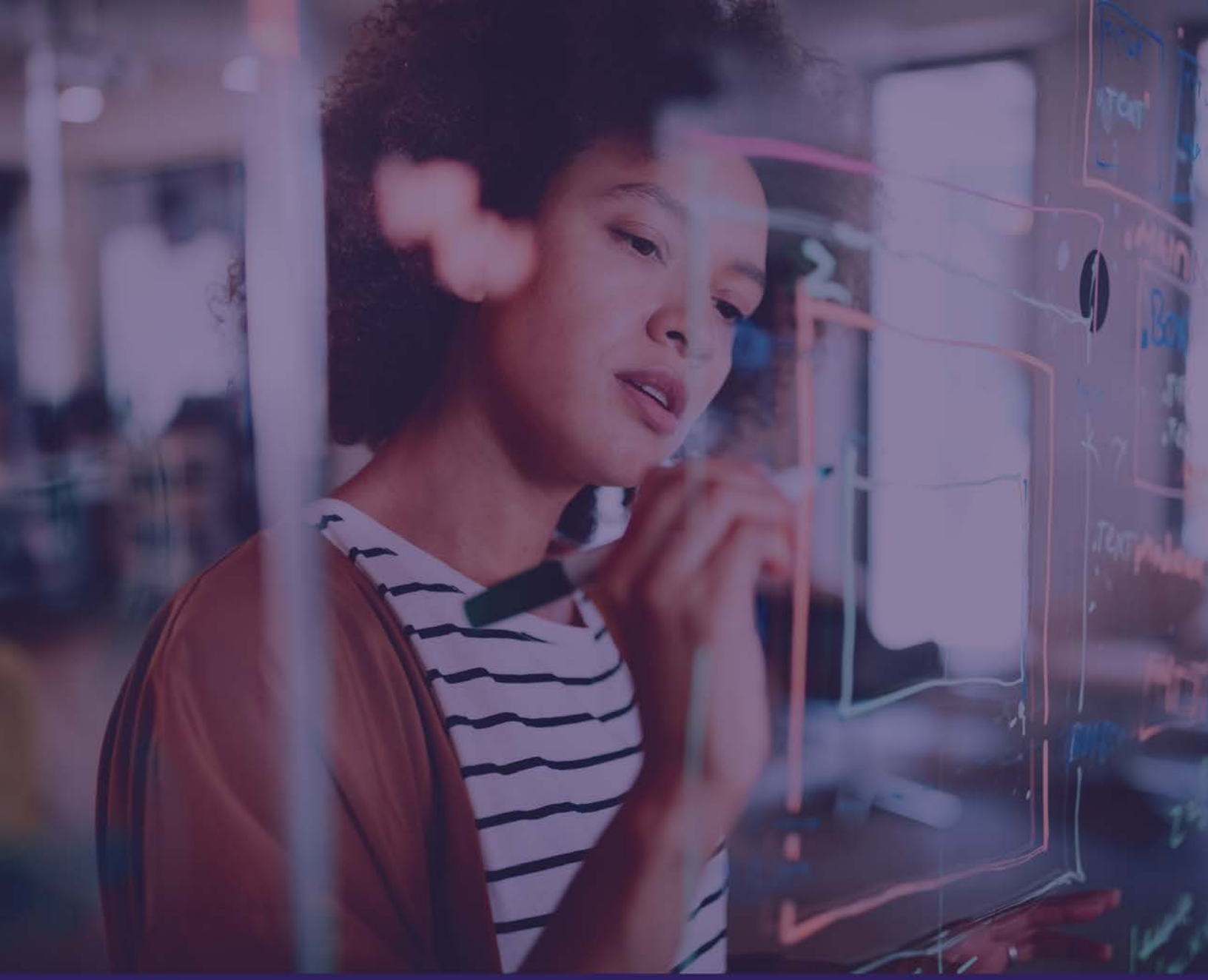

AI4Giving

Unlocking Generosity with Artificial Intelligence: The Future of Giving

by Beth Kanter & Allison Fine

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INTRODUCTION & EXECUTIVE SUMMARY

Purpose of Paper

The combination of ubiquitous data collection, cheap computing power and advanced machine-learning algorithms is broadening and deepening the role of automation in our everyday lives. From recommendations on what to watch and products to purchase to voice assistants providing the weather report on demand, artificial intelligence (AI) is beginning to shape our daily living experience.

While we are still in the early stages of mainstreaming artificial intelligence in the social sector, enough real-world uses exist that we can see the contours of how AI will enhance and expand philanthropy. As the use of AI matures, the ways in which players in the giving ecosystem need to be prepared to understand and use the technology to scale generosity and giving are also becoming clearer.

In this paper, we provide an overview of the current state of how AI is being integrated into online giving platforms and tools to enhance and expand philanthropic giving by all types of donors. We examine the current opportunities and challenges presented by AI in philanthropy.

Finally, we outline ways in which philanthropy could be made fundamentally different and, we believe, more effective by using AI to remake the relationships among donors, platforms, and causes to inspire more giving by more people.

As we were about to publish this paper in mid-March, the public health emergency created by the COVID-19 virus started to hit the United States.

AI is being deployed to fight the virus on the front lines, particularly in the healthcare industry as well as in vaccine and drug research. AI-generated predictions of a virus' structure can save scientists months of experimentation and accelerate vaccine or drug development[1]. For example, Microsoft's AI for Health Initiative recently pivoted to funding AI-driven COVID-19 health initiatives.[2]

Before social distancing became the first line of defense against the virus, automation had been gradually replacing human work in a range of jobs as companies looked to cut costs and increase efficiency. Social distancing is now accelerating this trend and may even be reducing the unease about having machines controlling parts of our daily life as society sees the benefits of restructuring workplaces to minimize human contact. However, as we resume daily life, we need to continue to discuss the implications of automation on jobs and people and companies.

Before COVID-19, our lives were filled with human-machine interactions driven by algorithms. Artificial intelligence gives computers the ability to receive feedback information from human behaviors, optimize algorithms and provide personalized recommendations or automated tasks. In the middle of today's COVID-19 pandemic, the presence of these technologies and society's reliance on them continues to grow. From AI-assisted contact tracing to COVID-19 diagnostic bots that can help healthcare workers direct their time to more serious cases, today's crisis points to an enormous appreciation for the potential of full-scale adoption of artificial intelligence.

1 https://www.datainnovation.org/2020/03/how-artificial-intelligence-is-aiding-the-fight-against-coronavirus/

2 https://blogs.microsoft.com/on-the-issues/2020/04/09/ai-for-health-covid-19/

While we are (as of this writing) in the early stages of the philanthropic response to COVID-19, the virus has been a more powerful catalyst for increasing giving and innovation than anyone could have ever imagined. In a post-COVID world, AI will no doubt help to sustain the spread and scaling of giving and generosity.

Methodology

This paper is based on in-depth interviews with more than 40 individuals including representatives of online fundraising platforms, data scientists, fundraisers, thought leaders, futurists, and others. We interviewed people primarily from the United States but also from Canada, China, and Europe. We asked open-ended questions about the existing benefits and drawbacks of AI and engaged in some visioning for the future. A complete list of interviewees can be found in Addendum A of this report.

We obtained the point of view of donors from existing research in the field. One of the important insights that we gained is that artificial intelligence, unlike previous generations of digital tools, is invisible to the end user. Designing for the donor will begin with traditional techniques such as design thinking to generate personas and empathy maps and using social science to understand donor behavior. User design for artificial intelligence is an entirely new discipline, a field called agentive design, which we discuss in the report.

This research paper was made possible with support from the Bill & Melinda Gates Foundation.

Executive Summary

Artificial intelligence (AI) is poised to change the world in significant ways. AI isn't new, but in a clear parallel to a time of explosive growth of the Internet twelve years ago, AI has recently become inexpensive, commercially accessible and easier to use for lay people. AI is about to reshape activism and philanthropy.

Disruptive technologies not only create efficiencies, they remake the relationship between organizations and various stakeholders, which in turn creates new kinds of business practices and norms. As early as 2007, social media fueled the democratization of philanthropic giving. The Causes app on Facebook gave individuals the means to immediately and inexpensively activate their social networks to support causes.[3] This enabled campaigns to unfold in real time and in public and triggered the "network effect," where friends of friends could take action without any additional money or energy expended by the campaign organizer.

The philanthropic and nonprofit sectors have an opportunity to proactively shape this next era and ensure that the technology remains dedicated to the values underpinning philanthropy.

3 https://en.wikipedia.org/wiki/Joe_Green_(entrepreneur)

Today, AI is forcing a new round of rethinking of existing business models and practices. This paper outlines the ways in which AI is poised to disrupt philanthropy, and the implications of these changes.

We are very early in the creation of an AI for Giving field (AI4Giving) that offers the potential to inform and activate new and existing donors to give more or to give to more causes. The question is whether the interests of the technology providers and the philanthropic community will align as the technology becomes more ubiquitous. Or, as we've seen with social media, whether the commercial interests of the technology platforms will sublimate the philanthropic interests of users.

We are at a tipping point for sector-wide adoption of AI systems and practices. The philanthropic and nonprofit sectors have an opportunity to proactively shape this next era and ensure that at least a significant portion of the technology remains dedicated to the values underpinning philanthropy such as generosity, empathy and transparency. However, this opportunity may be fleeting as AI technologists will inevitably face pressures to monetize their platforms and services.

Our research identified ways AI is and can be used to increase giving to causes and improve the donor experience. AI can:

- Facilitate the connection between everyday givers and nonprofits,
- Advise program officers and major donors on making more-strategic philanthropic investments,
- Support more-efficient stewardship of major and mid-level donors,
- Scale personalized communications for everyday givers,
- Help researchers better understand donors via data collaboratives,
- Automate internal reporting and other administrative tasks.

The most exciting opportunity AI4Good presents is freeing staff from administrative and rote tasks to focus on other activities in order to direct more time and effort to strengthening relationships with doers and donors. However, we found little effort to date on using AI to change the standard model of fundraising that is often transactional and has led to a crisis in donor retention. As Brigitte Hoyer Gosselink, head of product impact for Google.org says, "AI won't fix bad fundraising practices."

"AI won't fix bad fundraising practices."

Additional challenges include the current constraints of the technology to understand human empathy and the need of AI systems to have enormous sets of clean data to identify patterns. The nonprofit sector has long struggled to create such data sets. In addition, commercial platforms are unlikely to be transparent about how their algorithms are developed and used. And the technology is racing ahead of ethical concerns about data privacy.

We also note the tendency of larger, better-known nonprofits to have the capacity to take advantage of the new technology, leaving smaller, newer organizations behind. This asymmetry exacerbates the natural tendency of donors to give only to causes with which they are already familiar.

Each of these challenges could be addressed through the use of AI. We envision the expansion of everyday giving spurred by real-time information about local needs modeled on corresponding, existing commercial applications:

- ***Real-time GoFundMe*** - To power a system for funding individual needs in real time. For instance, a donor could fund ten beds for homeless individuals for one night.
- ***Yelp for causes*** - For peer-to-peer reviews and ratings of giving options.
- ***Lifestyle app for causes*** - To ensure that everyday decisions and purchases have an optimal philanthropic benefit.

We conclude the paper with recommendations for the field of philanthropy to support the use of AI to expand generosity. These recommendations include:

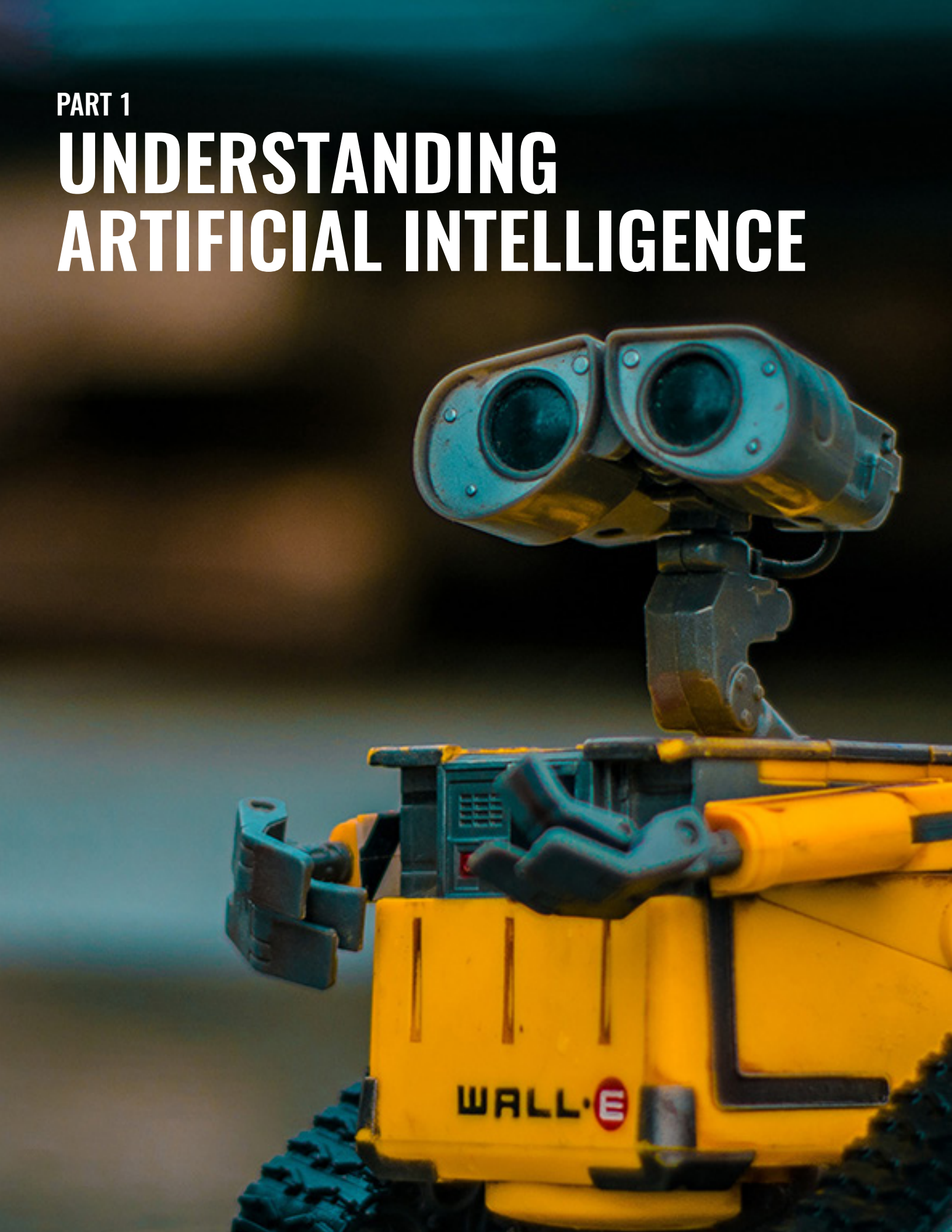
- Use AI to expand the giving of everyday donors
- Create a relational model for fundraising
- Support data collaboratives and comprehensive outcomes data
- Convene stakeholders to create ethical approaches to AI principles
- Increase nonprofit fundraisers' capacity to use AI tools

The most exciting opportunity AI4Good presents is freeing staff to focus on strengthening relationships with doers and donors.

The use of AI to expand philanthropy creates exciting possibilities for broadening who gives and to raise awareness of lesser-known causes. Our greatest hope is that philanthropic leaders will act quickly to invest in immediate needs such as data collaboratives, while also investing in experiments to find ways for AI to increase empathy and connections to a variety of causes.

PART 1

UNDERSTANDING ARTIFICIAL INTELLIGENCE



What is Artificial Intelligence?

Artificial intelligence (AI) is an umbrella term used to describe different types of technologies. Though AI comes in many flavors and varieties, at its heart AI is the use of computers to help perform tasks automatically that could previously only be done by humans. The intelligent behavior of pattern matching drives the ability to collect, organize and analyze data to generate insights and complete different tasks.

An easy way to understand how AI works is to think about Netflix, which uses machine learning, a form of artificial intelligence, to automatically make recommendations to users on what to watch based on collecting, organizing, and analyzing data on what you and other users have watched on Netflix.

AI requires four components to work successfully: strategy questions (for philanthropy, questions related to increasing or improving giving from the donor's perspective), data (lots of it), algorithms (mathematical models to analyze the data), and tools (computers and software).

> AI requires four components to work successfully: strategy questions, data, algorithms, and tools.

AI has existed since the mid-1950s. During the summer of 1956 at Dartmouth College, a group of scientists came together to explore ways that "machines could use language, form abstractions and concepts, and solve kinds of problems now reserved for humans, and improve themselves." They coined the phrase "artificial intelligence" to describe the work.[4]

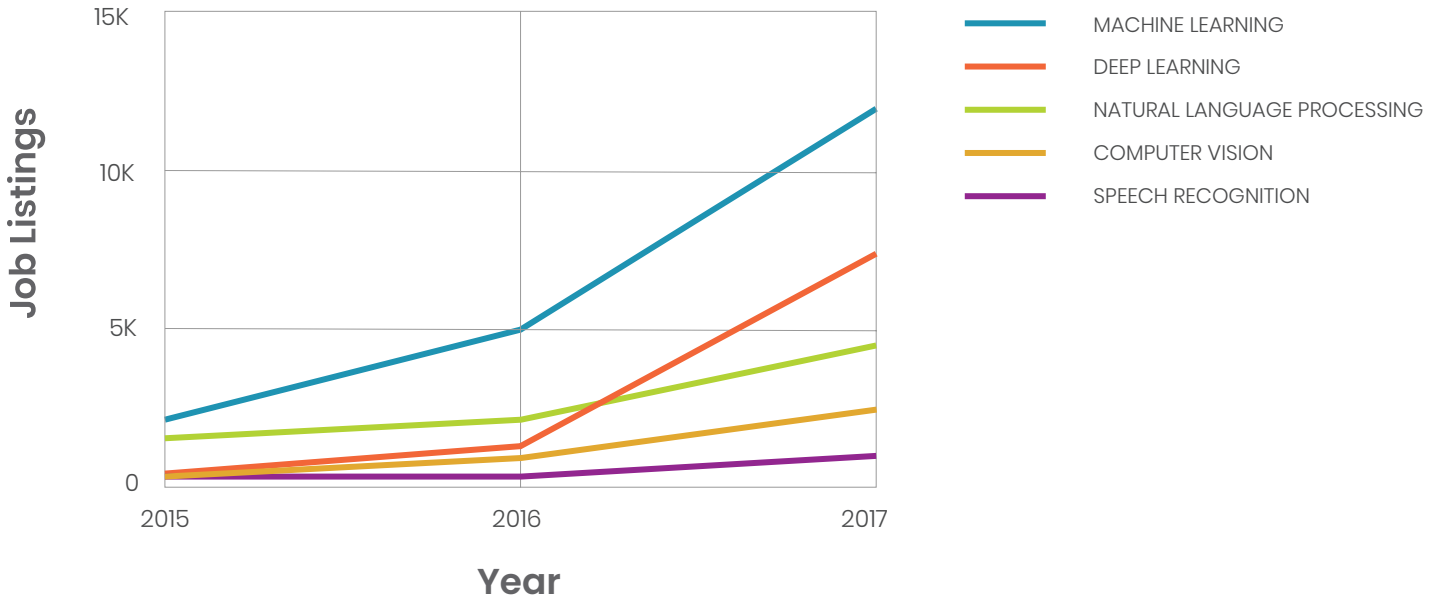
Fast forward to 2019: Artificial intelligence is growing exponentially in a wide variety of sectors, particularly healthcare, manufacturing and retail. One clear indication of the enormous interest in applications for AI is the increase in academic papers[5] on the topic. There has been a seven-fold increase of AI papers published on Scopus since 1996. Intellectual interest in AI has been accompanied by a huge expansion of jobs in the field as well.

4 http://www-formal.stanford.edu/jmc/history/dartmouth/dartmouth.html

5 http://cdn.aiindex.org/2018/AI%20Index%202018%20Annual%20Report.pdf

Figure 1: Growth of Jobs in Artificial Intelligence[6]

Job Openings, Skills Breakdown (monster.com)



Note: A single AI-related job may be double counted (belong to multiple categories). For example, a job may specifically require natural language processing and computer vision skills.

According to a recent Google.org report, Accelerating Social Good with Artificial Intelligence, narrow artificial intelligence technology can be classified into two different areas: core methods and AI-powered capabilities. In total, there are six subtypes: rules-based solutions, machine learning, audio processing, computer vision, machine-learning analytics, and natural language processing.

We found most fundraising platforms use rules-based solutions, machine-learning analytics, and natural language processing to improve and expand giving. We discuss these specific efforts in more detail in Part 2 of this report.

6 https://www.monster.com

Table 1: Types of Artificial Intelligence[7]

Core AI Methods		Currently Used by Interviewees
Rules-based solutions	Use explicitly stated rules to make decisions.	✓
Machine learning solutions	Learn without explicit programming, using examples to develop a model that can make decisions. Deep learning: Using multiple layers of artificial neurons to create a network that can make a decision based on raw input. Applications of deep learning include computer vision and speech recognition.	✓
AI-Powered Capabilities		
Audio processing	Hear, recognize, and process sound files and other auditory inputs. Speech recognition: Using audio processing to translate human speech to text.	
Computer vision	See, recognize, and process images, videos, and other visual inputs. Object detection: Using computer vision to pick out and identify particular objects and/or physical properties. Image and video classification: Using computer vision to understand and categorize or label visual inputs.	
Machine-learning analytics	Process and understand large volumes of data to identify patterns and make predictions.	✓
Natural language processing	Process, decipher, understand, and generate human language. Sentiment analysis: Using natural language processing to measure an author's or speaker's positivity or negativity.	✓

7 Google.org: Accelerating social good with artificial intelligence

Why Artificial Intelligence Will Be A Disruptive Technology for Giving

A disruptive technology forces a fundamental rethinking of existing business models and practices. In addition to creating efficiencies, disruptive technologies remake the relationship between organizations and various stakeholders, which in turn births a new set of business practices and norms.

We are in the midst of a continuum of changes overlapping one another. This framework, created by Jeremiah Owyang, describes six different digital eras based on past, current, and future disruptive technologies. AI—technology that automates previously human efforts and interactions—is a disruptive technology, but it doesn't stand alone.

THE SIX DIGITAL ERAS

Internet Era (Mid 90s)
Organizations' biggest challenge was digitizing information from the physical world.

Social Media Age (Mid 2000's)
Online social networks altered organizational fundraising and communications as campaigns and ideas spread faster due to the network effect.

Collaborative Economy Age (Now)
In the sharing economy, people get resources from each other: Uber and Airbnb are common examples. In the nonprofit world, the rise of peer-to-peer funding at scale becomes possible.

Autonomous World (Testing)
New technologies using artificial intelligence and machine learning are automating human tasks by analyzing enormous amounts of data. How these technologies can be applied to social change efforts is the focus of this paper.

Modern Wellbeing (Emerging)
We turn to technology to become more human. This includes wellness apps, avoiding technology addiction and overload.

Off Planet (Tomorrow)
Leaving Earth becomes accessible with tech companies developing space exploration. Everyone has a god view and humanity extends off earth.

If we wind back the clocks to a time twenty years before the age of social media, giving was dramatically different. The cutting-edge technology was direct mail. Donors received a letter on the organization's letterhead asking for a donation or membership to support the mission. Most donors wrote modest, annual checks to their favorite causes. Some may have increased their gift to get a coffee mug or calendar, but for the most part, people gave regular amounts to their favorite nonprofit organizations.

All of that was transformed 15 years ago, when the Internet and social media made person-to-person connecting, sharing, communicating and organizing easy and inexpensive—with or without organizations as intermediaries. This laid the groundwork for movements such as Giving Tuesday, a disaggregated, worldwide phenomenon, and the ALS Ice Bucket Challenge, a people-powered viral fundraiser that raised over $125 million in 2014.

P2P (Person-to-Person) Platforms like GoFundMe have also gained popularity with donors giving directly to people rather than to organizations, often to cover extraordinary expenses arising from a medical crisis. GoFundMe, the largest crowdsourced fundraising platform, says people have raised more than $5 billion from 50 million donations in the eight years since it began.[8]

Big social media platforms have helped accelerate the network effect, especially over the last five years. In 2015, Facebook, taking its inspiration from the ALS Ice Bucket Challenge, developed its fundraising platform. According to a Facebook press release, people have raised over $2 billion on Facebook to support the people and causes they care about, with $1 billion of that coming from birthday fundraisers alone. Facebook estimates that over 45 million people have donated to or created a fundraiser on Facebook, a number that has doubled over the past year.[9]

> "Digital tools don't get socially interesting until they get technologically boring."
>
> *Clay Shirky, Here Comes Everybody: The Power of Organizing Without Organizations (2009)*

Thus, the Social Media Age fueled the democratization of philanthropic giving. Now a new disruptive era, The Autonomous World, has arrived, powered by artificial intelligence. As often occurs with new technologies, it has taken many years to work out the glitches and make AI easily usable and inexpensive. Now that AI is on the cusp of commercial accessibility, it is about to reshape activism and philanthropy.

Artificial Intelligence for Social Good

AI for Social Good (AI4Good) is not an entirely new field. It evolved from previous movements associated with the use of technological advancement to solve societal challenges. Initiatives like DataKind, Data Science for Social Good, AI4ALL, and hack4impact have fostered new communities of individual programmers and data scientists working on projects to address societal challenges.

A number of international development agencies, such as the United Nations Human Rights Council (UNHRC) have established internal innovation units to develop and test prototypes using AI to support their programmatic efforts. This often happens in partnership with large technology companies. One agency, UNICEF, has an innovation unit that invests in startups to develop tools for its programs. AI prototypes include efforts using machine-learning algorithms to analyze satellite photos, delivering information about maternal health to new mothers via chatbots, modelling climate and environmental change, and helping to diagnose diseases.

The annual AI for Good Global Summit, organized by the United Nations, has become the leading conference and focal point for the conversation about artificial intelligence and UN development goals, sharing prototypes and research. In 2017, the UN established a repository to track and share learning with the field.[10] (For a landscape analysis of the AI4Good field, see "What is This AI for Good?" written by Eirini Malliaraki, an AI researcher,[11] and other resources in Addendum D.)

8 https://www.mprnews.org/story/2018/07/02/health-care-gofundme-crowdfunding-doctor-bills-minn
9 https://newsroom.fb.com/news/2019/09/2-billion-for-causes/
10 https://www.itu.int/en/ITU-T/AI/Pages/ai-repository.aspx
11 https://medium.com/@eirinimalliaraki/what-is-this-ai-for-social-good-f37ad7ad7e91

Last year, Google made an open call to organizations around the world to submit ideas for using AI to solve enormous societal problems. The Google AI Impact Challenge attracted 2,602 applications from six continents and 119 countries. Google's reflection report on the project, "Accelerating Social Good with Artificial Intelligence," organized the proposals into these thematic areas: crisis response, economic empowerment, education, environment, equality and inclusion, health, and public sector.

There were no proposals related to giving and philanthropy submitted for the challenge. This indicates that the AI4Good field is out ahead of philanthropy, and that philanthropy is ripe for investment in AI.

One clear trend in the field of AI4Good is nonprofit organizations partnering with big tech companies to create new applications. Social change organizations bring context and sector expertise to the problem, while technology companies or research labs provide technical expertise, toolkits, and resources to work with nonprofits to create AI solutions.

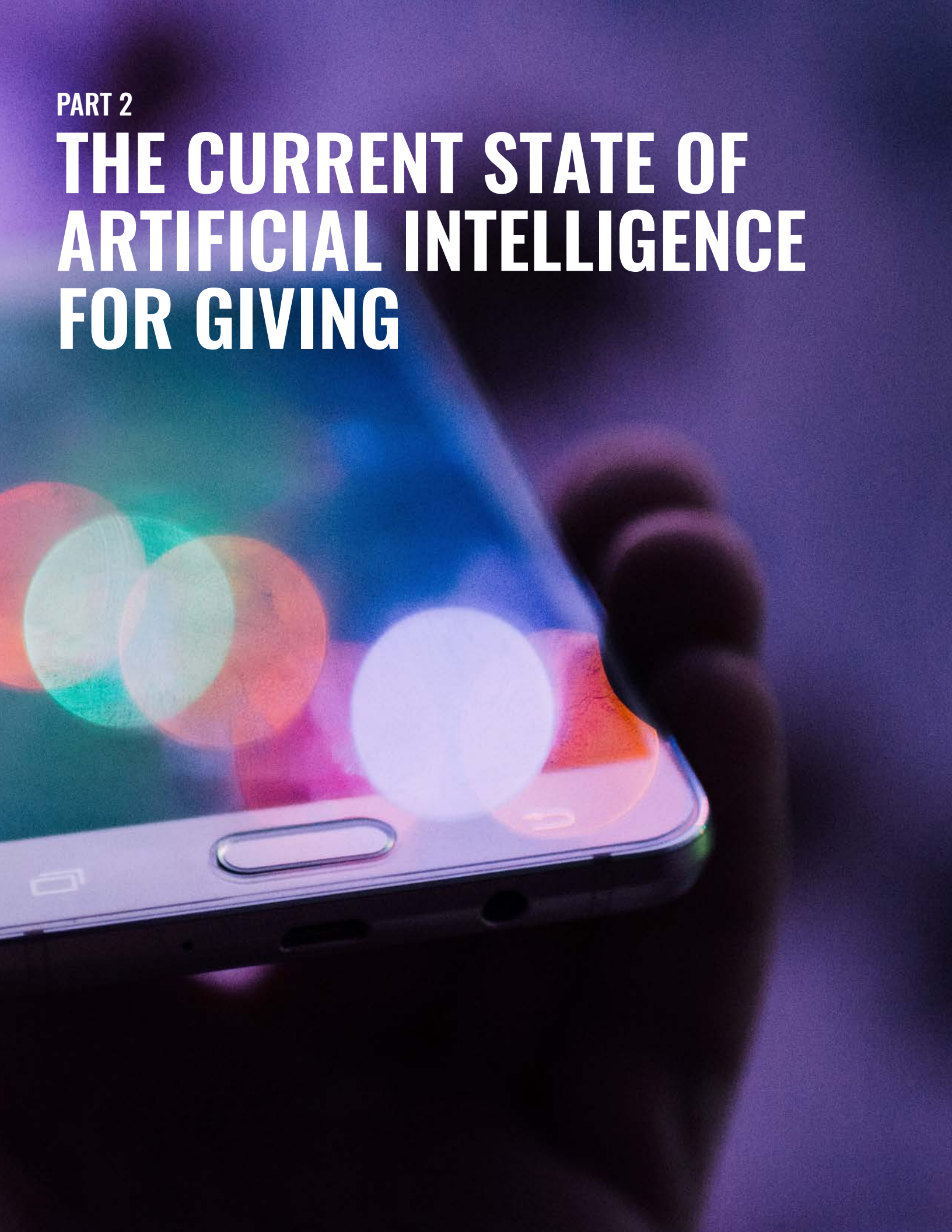
One example is a partnership of USA for UNHCR (a nonprofit created to support the UN refugee agency), Maxar Technologies' DigitalGlobe (a satellite imaging company) and Stanford University Sustainability and Artificial Intelligence Lab. They are using AI to map overcrowded refugee camps to relieve congestion and plan future camps. Camp mapping is typically labor-intensive as field staff survey the camps on the ground and upload the data manually. By connecting the power of satellite imagery with machine learning, this mapping project aims to reduce the effort needed to monitor camp growth and utilization and allow UNHCR to expand other program areas that assist refugees.[12]

To fulfill commitments to corporate social responsibility, technology companies are launching AI4Good initiatives. For example, Micosoft's AI for Humanitarian Action is partnering with a number of different aid organizations to apply AI in the areas of disaster response, refugees and displaced people, human rights, and the needs of children. Microsoft has also partnered with Operation Smile to develop a facial modeling algorithm that works with Microsoft Pix to improve surgical outcomes and help more children in need of facial surgeries.

Most of the AI4Good partnerships are focused on programs or field work, but a few are emerging that focus on philanthropy: a new field of artificial intelligence for giving engagement with current and potential donors. We discuss this in more detail in the next section of the report.

In summary, while the AI4Good field is more mature than AI4Giving, it does face challenges to full-scale adoption, including whether AI is the right tool to solve any given problem, the need for investment in data collection to address "data deserts," technological expertise on the nonprofit side to sustain AI-driven programs once tested, and the need for field-wide, formal ethical guidelines.

12 http://blog.digitalglobe.com/crowd/mapping-refugee-camps-to-inform-unhcrs-planning-and-maintainance/



PART 2

THE CURRENT STATE OF ARTIFICIAL INTELLIGENCE FOR GIVING

The Benefits of Artificial Intelligence Applied to Philanthropy

AI4Giving is in the early stages of development. It is being driven largely by platforms employing core machine-learning methods to:

- Facilitate the connection between everyday givers and causes,
- Advise program officers and major donors on making more-strategic giving investments,
- Support more-efficient stewardship of major and mid-level donors,
- Scale personalized communications for everyday givers,
- Help researchers better understand donors via data collaboratives,
- Automate internal reporting and other administrative tasks.

Platforms have greater capacity than a single organization to scale data collection to better understand donors, setting the stage for the creation of algorithms that can analyze and personalize donor engagement. Platforms can deploy machine learning to help donors more easily find the causes they care most deeply about and quickly assess their impact. Ultimately, AI4Giving could potentially help more people to give to charitable causes than ever before, and to help donors continue to give more to these causes over time.

AI can change how donors make decisions, become repeat donors, and encourage others to donate. The epicenter of this shift is happening on the "demand side" of philanthropy, thanks to giving platforms that can aggregate enormous amounts of data. The platforms are beginning to incorporate AI-driven features that will change what donors see and when they see it. With the ability to analyze unprecedented amounts of data, platforms could provide information to donors that balances data-based decisions with emotionally driven donations.

More information about exactly how giving can benefit from AI is summarized in the table below and in more detail in this section of the report.

How Is Artificial Intelligence Being Used by Platforms Today?

There are a growing number of examples of platforms incorporating AI into their internal operations as well as using it to engage with donors. We have organized these efforts into six categories.

Table 2: Summary of How Platforms Are Using Artificial Intelligence

Giving Practice	Benefits	Type of Donors	Examples
Donor Matching & Personalization Engines: Machine learning and donor data gathered from explicit or implicit behavioral data to match donors with a nonprofit or cause to support. Nonprofit data is also gathered and categorized through algorithms.	Facilitates more engagement through personalized communication.	• Workplace donors • Everyday donors	• Philanthropy Cloud • DonorsChoose • GlobalGiving • Ant Financial/ AliPay
Philanthropic Advising: Uses machine learning and algorithms to provide recommendations for philanthropic investment. Also includes the potential for automated impact ratings.	Helps donors make investments that yield the highest impact or strategic system change.	• Program officers • Online donors	• Candid • Charity Navigator • ImpactMatters
Donor Prediction Models and Automated Stewardship Workflow: Machine learning core methods to train algorithms on donor data to identify most likely donor prospects. Also predicts "about to be lapsed" donors who need re-engagement. Some models append nonprofit CRM data with third-party data sets.	Saves fundraisers time by automating tasks including suggesting cultivation strategies, generating draft communications, and scheduling in-person meetings with donors in person.	• Major donors • Mid-range donors • Peer-to-peer • Lapsed donor	• Blackbaud • boodle.AI • Gravyty • Neon One

Giving Practice	Benefits	Type of Donors	Examples
Online Fundraising Campaigns: Machine learning analytics to analyze donor databases, sometimes appended to third-party data sets or social media data. Also includes the use of chatbots.	Used to personalize donor engagement & communication, convert donors via customized landing pages and analyze unstructured social media data to personalize donor communication at scale.	• Everyday Donors	• Nonprofit Cloud • Quilt.Ai • CivisAnalytics • Persado • Chatbot platforms • GiveLively
Donor Research/Data Collaboratives: Platforms that are sharing data for research purposes with privacy protocols and ethical standards.	Data is used for research to better understand giving patterns.	• All donors	• GivingTuesday • Fundraising Effectiveness Project
Reporting and Workflow Tools: Uses machine learning and natural language processing.	Helps platforms efficiently generate reports or automate administrative tasks like customer service for causes & donors, reports, and website content	• All donors	• GlobalGiving • DonorsChoose • Crisis Text Line • USA for UNHCR • GiveLively

DONOR MATCHING AND PERSONALIZATION ENGINES

For workplace giving and online everyday donor platforms, the focus is on matching donors with charities at scale. When donors are connected with causes or organizations they love, the relationship shifts from transactional to relational—increasing the likelihood donors will give multiple times.

Personalized relationships at scale can't be done without an algorithm and data.

The most mature example we found was Philanthropy Cloud. Originally developed to serve as Salesforce.org's internal employee giving tool, Philanthropy Cloud is now available as an employee engagement database product for corporations to facilitate employee volunteering, giving, and other social impact activities. As Salesforce Vice President of Innovation and Products Nick Bailey notes, "It [the algorithm] can help employees find and connect with the causes they're passionate about. It allows us to do personalized philanthropy at scale."

Bailey says that personalized relationships at scale can't be done without an algorithm and data. It is beyond the capacity of any human to match hundreds of thousands of donors with nonprofits successfully. On the other hand, artificial intelligence is very good—and fast—at this kind of task. "The user can tell the application where they are geographically, the causes they care about, the skills they have, and combined with the actions they take in the app, the algorithm serves up the right opportunity to engage them at the right time."

Philanthropy Cloud is not just about serving up the best potential list of causes. Collecting and analyzing data from employees about their experience volunteering or donating is also part of the mix. Employees fill out a personal user profile when they sign up to participate. The profile includes explicit data about their interests, location, and type of volunteering activity. But more important, the donor matching engine also collects information about their actual behavior and experience. What type of volunteer job did they do? Was it a good experience or not? Based on how they rate the experience, the system might invite them to participate again or to donate. The donation page has customized donation amounts based on their past giving history. If the donor rates the volunteer experience low, that feedback is passed along to the nonprofit for follow-up.

The algorithm also needs to work with a categorized set of data about the nonprofits. The classification or taxonomy is important. Philanthropy Cloud uses a combination of data sets including the NTE Code used by the IRS to classify Form 990s and cross-references it with the UN Development Goals. They also use natural language processing to analyze nonprofit mission statements to help further refine nonprofit categories. (The specifics of how this all works is a Salesforce trade secret.)

It is about optimizing the entire donor journey: asking for the right thing at the right time with personalization.

As Bailey sums up, Philanthropy Cloud is not just about matching an employee to a nonprofit and optimizing the ask for money, it is about optimizing the entire donor journey: asking for the right thing at the right time with a lot of precision and personalization.

United Way plans to adopt Philanthropy Cloud as a platform at the enterprise level for corporate workplace employee engagement and giving. Every United Way affiliate will use and customize it for their local community.

According to William Browning, chief strategy and transformation officer for United Way Worldwide, Philanthropy Cloud has helped United Way modernize their approach. Notes Browning, "It has helped us shift away from a one-time annual employee giving campaign to year-round employee engagement to support local communities. The artificial intelligence helps us better understand the user patterns and behavior using the system."

Says Browning, by partnering with Salesforce.org Philanthropy Cloud, United Way is able to provide a consistent workplace giving platform to all its affiliates, instead of each affiliate doing its own thing. It is not only more efficient, but also helps them better understand best practices for employee engagement and workplace giving. Ultimately, United Way will be able to analyze insights across a larger, combined data set.

Donor matching and engagement engines are at different stages in development.

Everyday donor platforms such as GlobalGiving and DonorsChoose are in the early stages of deploying more sophisticated artificial intelligence techniques to upgrade and create more effective donor-matching engines.

GlobalGiving built a simple project recommendation engine several years ago that has been working well. As Data Scientist Nick Hamlin notes, "Implementing new machine learning models in production is always complex, so we'll need to be thoughtful about making major changes to our

recommendation engines. The big question will be: given the new data, algorithms, challenges, and product goals, how might we rethink the ways that we suggest potential projects to potential donors in the most effective and responsible way possible?"

DonorsChoose is in the process of incorporating more-advanced machine-learning algorithms to make it easier to find projects that fit the interests of potential donors. The first step is an automated categorization algorithm. Mohammad Radiyat and Oliver Hurst-Hiller of DonorsChoose explain, "We built a machine-learning algorithm that predicts which of 12 categories a teacher-requested item falls into based on its name. It automatically categorizes classroom projects so that both partner organizations and donors can easily find the kinds of resources they wish to fund."

According to Ruixi Hao, program officer in China for the Bill & Melinda Gates Foundation, efforts in China to integrate the use of artificial intelligence on online giving platforms are underway. Some pilots are testing donor matching and personalization algorithms where the platform determines what the donor might be most interested in based on preferences or past giving information and provides personalized information to the donor, including suggested donation amounts.

"If we could use machine learning to analyze data both on need and on the social impact of nonprofits and other interventions, it would enable identification of where the most pressing needs were at any given time."

Donor matching and engagement engines are at different stages in development depending on the platform's resources and internal capacity. We discuss the challenges and bottlenecks later in this report.

PHILANTHROPIC ADVISING

Philanthropic advising uses machine learning to provide recommendations for philanthropic investment that will yield the highest impact or best strategic or system level results. The technology is deployed to help donors give better, whether they are major donors, everyday donors, or program officers.

According to many of the experts interviewed, artificial intelligence has tremendous potential for creating personalized philanthropic advice to donors at all giving levels. Rhodri Davies, head of policy at Charities Aid Foundation (CAF), authored the 2019 white paper, Machine Made Goods: Charities, Philanthropy, and Artificial Intelligence describing the opportunities. "If we could use machine learning to analyze data both on need and on the social impact of nonprofits and other interventions, it would enable identification of where the most pressing needs were at any given time, as well as the most effective ways of addressing those needs through philanthropy, and thus potentially enable a rational matching of supply and demand."

Davies coined the term "philgorithm" to describe the use of algorithms to detect basic patterns or gaps in a donor's strategy. He is clear that artificial intelligence would not eliminate the jobs of program officer or philanthropic advisor but augment them. Similar to the other use examples, people would make decisions based on data provided by the algorithm. Davies predicts that once these systems are fully enabled, they will change the way people invest in social change.

There are already numerous examples of financial services companies developing "robo-advisors" to give advice to customers. This makes such services more cost-effective for everyday donors and allows giving to be dramatically scaled up. The Nonprofit Trust "2019 DAF Report"[13] predicts that emerging models for donor-advised funds, such as workplace giving using donor-advised funds and low- or no-minimum donor-advised fund accounts, will play a significant role in increasing the number of donor-advised funds. In addition, online tools like mobile apps, online transactions and credit card processing have facilitated donor-advised fund giving in unprecedented ways and will no doubt pave the way for AI-driven tools in the future.

Philanthropic advising can be implemented in many different ways, but in general terms it usually consists of identifying:

- *A donor's objectives based on their interests*
- *The most pressing needs within social impact areas or geographic locations*
- *Nonprofits working to address those needs*
- *Which of these nonprofits is most effective*
- *Additional variables such as giving models, tax implications, legal considerations etc.*

Our interviews indicated philanthropic advising is in the embryonic stage and will require more development and testing. There are two key challenges: First, how will algorithms be programmed to assess the impact of a nonprofit or investment strategy? Second, how will the enormous data sets needed to enable AI to work well be constructed? We discuss these issues more in the next section of the report.

For example, Candid has over a decade's worth of manually coded data and they have used it to train a machine-learning categorization algorithm for mapping donors to recipients. The algorithm does the grunt work and it learns from the human-coded effort. Candid's Vice President of Products Jake Garcia notes, "Now that we have enough data in the system that has been accurately categorized, nonprofits (and program officers) can do queries such as 'What nonprofits are working on clean water projects and are based in New York and build wells in Ethiopia?'"

The one drawback is that until recently Candid's system, according to Garcia, was not working with real-time information due to a two-year lag time for data from the IRS, an important data source for Candid's products. To address this issue, Garcia says they have built a news media monitoring platform. It scrapes about 300,000 news articles per day, dynamically identifying an average of 1,500 articles each day on philanthropy and categorizing them by subject, population group, and locations. The algorithm analyzes the articles for patterns such as the most frequently mentioned organizations and geographic areas or the establishment of foundation funds, grants, and RFPs. Candid is currently using this prototype in beta as a companion piece to Philanthropy News Digest and as a tool for their analysts and researchers, who have begun to shift their focus to real-time data so that their users can have improved access to actionable information, especially in times of crisis.

13 https://www.nptrust.org/reports/daf-report/

Charity Navigator is also working on a plan to upgrade its technology infrastructure. President and CEO Michael Thatcher says, "We are moving our server-based ratings application to the Cloud. This will pave the way for using artificial intelligence to rate over 100,000 organizations versus just under 10,000 today."

With these enhancements in place, Charity Navigator will be able to increase the number of organizations rated as well as how they are rated. Charity Navigator anticipates using machine-learning algorithms to pair their data with data from other sources such as Mission Measurement's Impact Genome Project and ImpactMatters.

Dean Karlan, co-founder and chairman of ImpactMatters—the first broad ratings system for charities measuring how much good they do—observes, "In thinking about the use of AI to help donors have more impact, the fundamental challenge is two-fold. We lack good metrics and analysis on the impact of charities that then can be lined up with donor preferences for causes. And we lack a broad market driven by impact data, a market environment which could lead to more everyday donors supporting high-impact charities. Both of these obstacles can be overcome, but requires the right partnership of charities, donation platforms, donors, social scientists, and impact wonks."

"We lack good metrics and analysis on the impact of charities that then can be lined up with donor preferences for causes and a broad market driven by impact data."

The use of AI in this area holds lots of potential, but platforms need to overcome significant challenges that we discuss in the next section of the report.

DONOR PREDICTION MODELS AND AUTOMATED STEWARDSHIP WORKFLOW

This category includes the use of machine learning, algorithms, and automated tasks for major-donor stewardship. The features are embedded in donor database platforms and use core machine-learning methods to train proprietary algorithms using the organization's donor data. In addition, some platforms also append third-party data to further train algorithms. These features help a fundraiser using the platform to quickly identify the most likely major donor prospects and automate tasks in the fundraiser's workflow. The platforms that we interviewed that are providing these features include Blackbaud, boodle.AI, Gravyty, Salesforce Nonprofit Cloud, and Neon One.

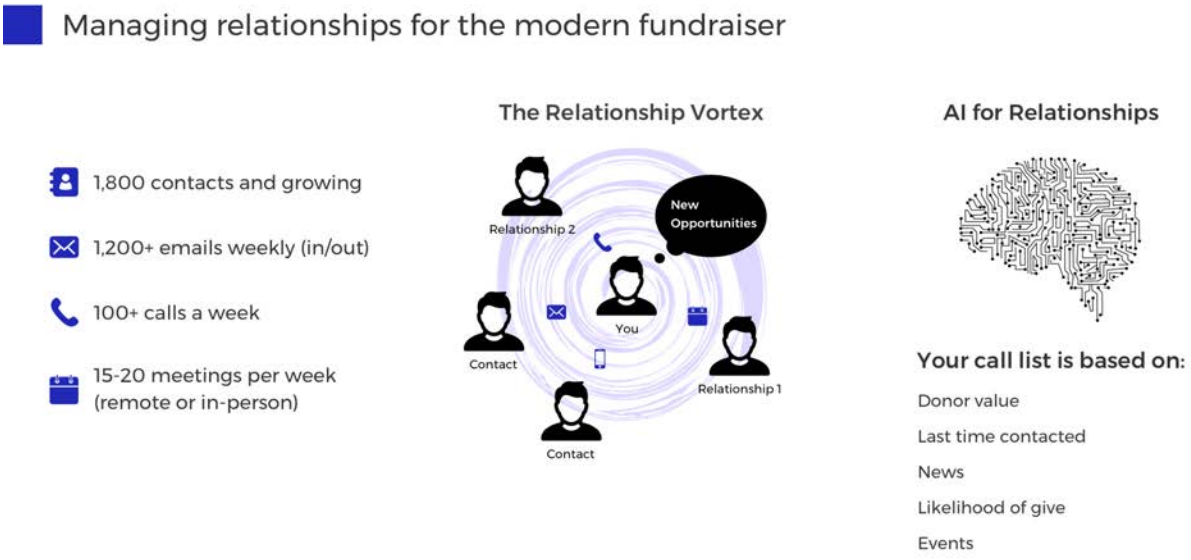
Using an algorithmic approach to donor stewardship is more efficient than a human combing through thousands, if not hundreds of thousands, of donor data points to identify the best potential donors to focus a fundraiser's limited time on. The algorithm is much faster than a human at discerning patterns in a large ocean of donor data, and unlike a human, does not get interrupted by other tasks or overwhelmed.

Put another way, the machine learning does the mundane and time-consuming task of culling the donor database, which includes both structured and unstructured data, to create a prospect list. This task might take an experienced fundraiser a week of tedious desk work, but the algorithm can accomplish it in minutes. The fundraiser is freed to use that time for face-to-face meetings with donors, delving deeper into their interests and needs to personalize cultivation and an ask. The donor prediction model is not just for major gift officers from larger fundraising shops who are

focused exclusively on five- or six-figure gifts. It can also be leveraged by fundraisers at smaller development offices who are often juggling donor stewardship for corporate sponsors and mid-level donors. NeonMoves, a mobile application, is designed to help fundraisers spend less time trying to figure out who to contact and add more face time with the donor. The app was originally designed for a national nonprofit's development team who were managing many relationships with corporate sponsors, mid-level and major donors in many different geographic areas across the country. The mobile app helps make the fundraiser's road trips to visit donors more efficient by identifying other donors to meet while in a particular geographic area, among other tasks.

Fundraisers can reallocate screen time to personalize cultivation and an ask.

Figure 2: Managing Relationships for the Modern Fundraiser [14]

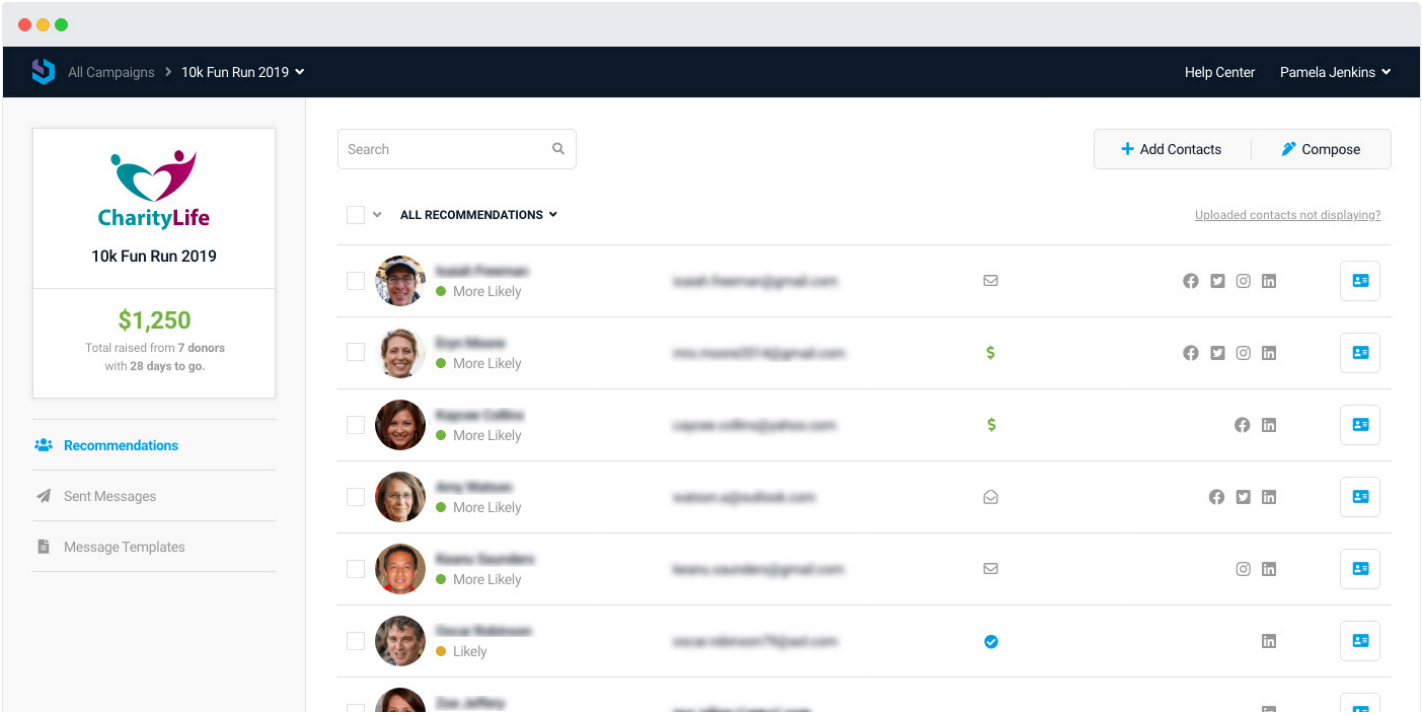


The specific recipe for the various algorithms (data sets, data points, mathematical formulas) differs from platform to platform and in many cases is a trade secret. In general, the ingredients may include structured data (such as past giving, affinity, demographic characteristics) open data sets (such as Census data) and analytics.

Unstructured data such as the "notes section" of the database, donor meeting reports, and qualitative data from the web and social media may also be included. Some platforms we interviewed are also training donor prediction model algorithms with third-party data. For example, boodle.AI's proprietary model links 500 data points across a 220-million-record data set. The data set includes demographic, lifestyle, and other characteristics as well as behavioral analytics. The data set is fused with the organization's data set by the algorithm to provide a richer predictive model for the likelihood of donations. Other platforms we interviewed are considering data exchanges and collaboratives where the platform facilitates meta-analysis or creates algorithms based on donor data from multiple donor databases using the same platform.

14 https://www.neoncrm.com/neonmoves-powered-by-artificial-intelligence/

Figure 3: boodle.AI Sample [15]

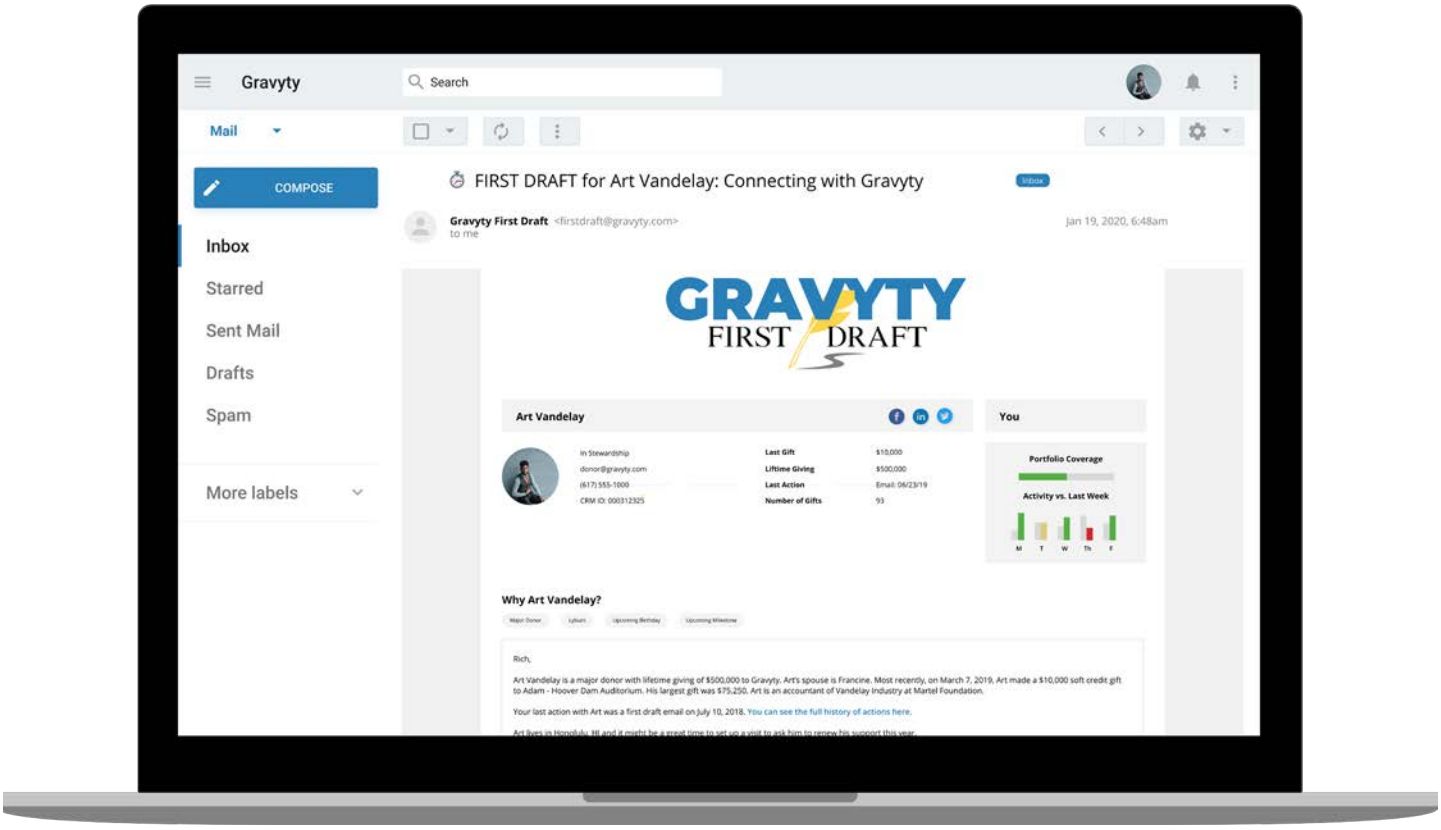


Another way that machine learning helps save time for fundraisers is in the automation of their workflow. For example, many fundraising departments miss important opportunities for donor touchpoints like acknowledging gifts, thanking donors, and other stewardship practices because they are pressed for time or overwhelmed. When an algorithm can provide reminders, first drafts, and reports, it increases the fundraiser's productivity which in turns improves donor stewardship.

Gravyty, a platform that works with Salesforce Nonprofit Cloud, is designed for major gift officers. Adam Martel, chief executive officer of Gravyty, says the platform goes beyond generating a donor prospect list. "It auto-generates emails in the style of the fundraiser and it learns through interaction." Martel is careful to note that the email language is a suggestion for the fundraiser and can be edited before it is sent. The draft email is based on all of the data gathered about the potential donor. Gravyty will also create a draft donor cultivation plan based on major gift best practices. It can also provide travel recommendations for the fundraiser to plan donor visits and, using data from online sources like Yelp, identify a restaurant for a donor meeting spot that is convenient and aligned with the donor's interests.

15 https://boodle.ai/2019/10/07/meet-the-new-boodleai/

Figure 4: Gravyty Sample [16]



One enormous upside of these efforts is greatly and efficiently expanding the number of potential donors for an organization. This is especially true in peer-to-peer fundraising where supporters tap into their personal networks for donations. Blackbaud Vice President of Product Management Steve MacLaughlin explains, "Blackbaud is using machine learning in peer-to-peer fundraising. It creates a network map and analyzes how well-connected prospects are [to each other and the organization.]" He notes that finding new donors is a leaky bucket problem. "If an algorithm could better understand the peer networks of current donors, it could help the nonprofit bring in new donors."

When an algorithm can provide reminders, first drafts, and reports, it increases the fundraiser's productivity which in turns improves donor stewardship.

"If an algorithm could better understand the peer networks of current donors, it could help the nonprofit bring in new donors."

AI-powered tools also help retain new donors. As boodle.AI's co-founder and chief strategy officer France Hoang explains, "boodle.AI helps nonprofits find the best potential donors in any list of prospects by using the nonprofit's data along with billions of third party data points to build

16 https://www.gravyty.com

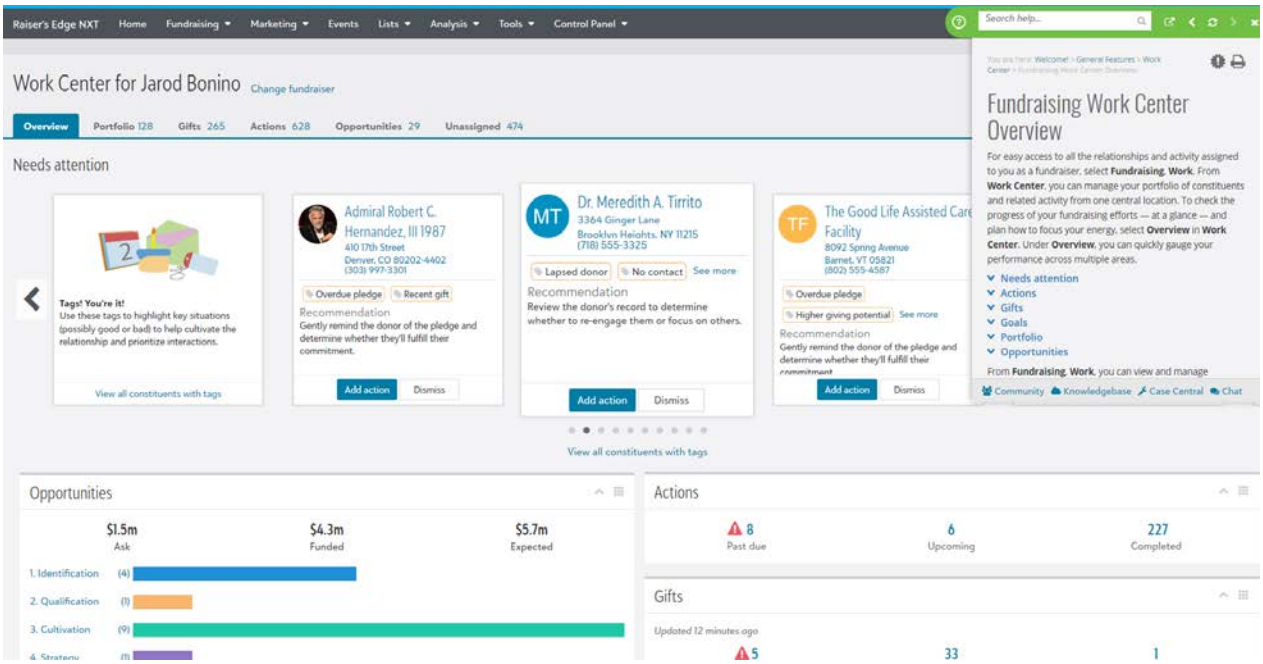
predictive models that determine who is the best fit for the organization. These models improve retention because these new potential donors look most like the nonprofit's past and present best donors. The intent is to feed the organization's donor pipeline with high affinity leads."

Some platforms have created prediction models that identify donors who are in danger of lapsing and need to be re-engaged by the human fundraiser. Blackbaud's algorithm flags these donors before they lapse to give the organization an opportunity to reach out and renew their giving.

"The algorithm looks for bad scenarios: donors that might lapse or donors that need to be reactivated."

Notes MacLaughlin, "The algorithm looks for bad scenarios: donors that might lapse or donors that need to be reactivated." He points out that the algorithm predicts the likelihood they will fall into the "not this year" category based on analyzing lapsed donors in the database. The algorithm automates notifications to nudge the fundraiser to take some action to re-engage them. For example, it might say, 'Sally Smith Donor has had no contact since [date] and is in danger of lapsing.' Maclaughlin says, "Nonprofit fundraisers pay attention to these alerts!"

Figure 5: Raisers Edge Sample[17]



ONLINE FUNDRAISING CAMPAIGN PLATFORMS

This category includes the use of machine-learning analytics to analyze donor data in an organization's database, sometimes appended to third-party data sets or social media data. The analysis enables automated, personalized engagement and communications online for everyday donors at scale. In other words, fundraisers are able to treat smaller donors with the same personal touch that has been typically reserved for larger donors.

17 https://www.blackbaud.com/products/blackbaud-raisers-edge-nxt

This category also includes the use of chatbots or "conversational AI," which deploys machine learning and natural language processing to interact with donors online. These tools not only help improve the retention and conversion rates for everyday donors by personalizing the messaging and engagement via email, social media and landing pages, but also bring in new everyday donors.

While Nonprofit Cloud at Salesforce.org has a wide range of use cases—from program management to marketing automation—it offers significant value as a tool to reach everyday donors online. The key benefit according to Kevin Bromer, former vice president, product delivery for Salesforce/Nonprofit Cloud, is that, "The era of spray and pray fundraising campaign strategy will be gone." He continues, "AI gives nonprofits the ability to better customize a donor's experience. Fundraisers have the ability to specifically craft how to ask the donor, whether the ask is appropriate at the moment, the message, and align with the donor's capacity to give." Nonprofit Cloud by Salesforce.org and other tools in this category give nonprofit fundraisers the capacity to treat everyday online donors like major donors without additional effort or fundraising staff.

Bromer imagines an optimistic future for online fundraising campaigns to expand everyday donors. He points out that people are accustomed to seeing specific information targeted to them online via Google or Facebook. The same approach to personalization can be used for fundraising solicitations and communication on all online channels. Bromer says, "We can imagine 100% response rates because the fundraiser is only sending information to people ready to see it and act on it. That provides a huge ROI along with a better donor experience."

Nonprofit Cloud by Salesforce.org and other tools in this category give nonprofit fundraisers the capacity to treat everyday online donors like major donors without additional effort or fundraising staff.

Quilt.AI helps nonprofit users move from audience target groups to personalization. The platform indexes and clusters millions of human conversations and expressions across public social media, news, blogs, institutional sources, and search engine trails. It also integrates marketing principles and human behavior models into its machine-learning-based model. As Quilt.AI Co-Founder and CEO Anurag Banerjee points out, "We create a quilt of understanding from trillions of digital fragments." Quilt.AI is about 18 months away from developing a specific model for predicting giving behavior and philanthropy that could be used by nonprofits to personalize online giving campaigns for everyday donors. The model would combine donor motivation, characteristics, and affinity to predict giving behavior. Banerjee notes, "People live in their own 'filter bubbles,' and a fundraiser has to understand what motivates and shapes their opinions in order to effectively communicate with them. Otherwise, it is just a scattershot approach."

Rita Ko, director of a USA for UNHCR innovation unit called HIVE, manages an internal multidisciplinary team of data scientists and user experience specialists. They have been applying machine learning for programs as well as fundraising. In 2017, they started working on CivisAnalytics, helping organizations build "micro-targeting" algorithms based on machine-learning analytics and their own donor data combined with third-party data. They created a model to identify the best potential online everyday donors who could be converted with personalized messaging.

Ko offered a specific example: "The refugee crisis is polarizing. There is a lot of noise and strong feelings around the crisis. In collaboration with DataKind, we developed an algorithm that sweeps through 44 news media outlets and any stories they publish on refugees or immigration. We use natural language processing, a machine-learning technique, to generate a summary of topics and sentiment of individual news stories. The report is automatically shared via Slack with our communications and fundraising teams so they can figure out how to change the conversation or develop messaging that will help convert or acquire new donors."

Persado is another online fundraising campaign tool. It uses machine learning and natural language processing to analyze the performance of the fundraising campaign's creative elements: narrative, emotion, calls-to-action, formatting, and word positioning. It cross references the words with its database of more than one million tagged and scored words, phrases, and images in 25 languages. It learns continuously and is able to generate insights about what campaign creative materials resonate with donors. Nonprofit fundraisers are using this to improve results of online fundraising campaigns. For example, charity:water is using Persado to better understand which content and images on Facebook generate more recurring donors for its monthly giving program.

While these examples are from nonprofit organizations with sophisticated technical and data capacity, one can imagine online giving platforms in the future incorporating similar machine-learning analytics features on their platforms for fundraisers to improve giving. David DeParolesa, CEO of Give Lively notes, "We have just started to experiment with AI-driven features, for example, with personalizing donor giving amounts on our landing pages."

One of the fastest-growing online campaign tools over the past several years are chatbots. Chatbots are online conversational interfaces that can automate answering basic questions from supporters, directing them to information, or collecting contact information. Chatbots use a combination of machine learning and natural language processing. Chances are you've engaged with a chatbot without knowing it by clicking on a representative for a company and texting a conversation about, say, how to return the wrong size shoes.

Chatbots increase a nonprofit's ability to interact and engage with supporters and donors 24 hours a day, seven days a week at almost no cost.

In 2016, Facebook opened up Messenger to allow companies (including nonprofits) to program their own chatbots on the platform for the purpose of customer support, e-commerce guidance, content and interactive experiences. By 2018, more than 300,000 Facebook Messenger bots were in use. In addition, more bot-authoring programs that allow people without technical programming skills to create bots have also become available.

Chatbots increase a nonprofit's ability to interact and engage with supporters and donors 24 hours a day, seven days a week at almost no cost. Chatbots are available to answer questions and allow staff to do other work. Nonprofits appear to be quickly adopting the use of chatbots. The Climate Reality Bot is designed to educate supporters of the Climate Reality Project and build the organization's email list for action alerts. Designed with ChatFuel, it is a simple bot, using close-ended options to funnel supporters to different options on the lower rungs of the ladder of

engagement. This is a simple way to get started using bots strategically and requires minimal upfront design time or customization.

Chatbots can do more than provide information and gather email addresses. Through its #HereIAm campaign, the British charity Mencap uses a chatbot named Aeren to enable people to experience engaging with a young person with learning disabilities. Mencap reported a three percent increase in understanding of the needs of the disabled after supporters engaged with the bot.

Direct Relief, a humanitarian aid organization, turned to the Facebook Messenger bot when the organization's one-and-a-half-person social media team could not keep up with requests for aid during Hurricane Harvey two years ago. The chatbot also provides assistance to people who want to volunteer or fundraise. The bot encourages people to become everyday champions for a cause by offering suggestions and tips on how to set up a fundraiser for a cause on a crowdfunding site or a Facebook fundraiser. After prototyping the chatbot using a bot-authoring platform, the organization realized it needed a more sophisticated chatbot and worked with botbuilder Mind Heros. They have since open-sourced their model and it is available for free to other nonprofits through BotsForCharity.com.

> "Imagine if someone made a donation and got thanked by a beneficiary in real time. This gets us out of the transactional e-commerce mentality; we are 'selling' joy and connection."

Several of the experts we interviewed suggested a future in which bots could directly connect donors with beneficiaries in real time. There are ethical concerns here regarding social service delivery which we discuss later in the report, but the idea of organizations serving to connect people in need directly with people of means is an interesting avenue for future exploration. As Ettore Rossetti of Save the Children says, "Imagine if someone made a donation and got thanked by a beneficiary in real time. This gets us out of the transactional e-commerce mentality; we are 'selling' joy and connection." This is distinct from the completely disintermediated world of GoFundMe, but rather it is a way for nonprofits to leverage the power of person to person giving.

DONOR RESEARCH/DATA COLLABORATIVES

Across the board, we heard from experts on the need for massive amounts of data to scale AI for philanthropy. No single nonprofit is going to be able to generate that much data. That's why consortiums of platforms are sharing data for research purposes with privacy protocols and ethical standards firmly in place. Data is used for research to better understand giving patterns. Machine-learning analytics are being used to generate insights. Such data collaboratives create opportunities for organizations and platforms to collaborate across the silos of their own limited datasets.

Allison B. Lowndes, who directs AI partnerships for NVIDIA, says, "A great opportunity for AI in giving would be to use artificial intelligence to analyze a massive number of research studies and donor data and share those insights with the field." Lowndes points out that NASA is doing something

similar in the area of astronomy research using natural language processing and neural networks to analyze every piece of scientific literature to assist human specialists in finding new ideas for research investment.

Giving Tuesday's Data Collaborative is working with partners across different giving channels and borders to create larger data sets on giving, understand the drivers and impacts of generosity, explore giving behaviors and patterns, and use data to inspire more giving around the world. After gathering data on donations from payment processors, giving platforms, the government (990 data, workplace giving), social media, and nonprofits, it became apparent that there was an opportunity to learn much more about giving—the drivers behind it, the behaviors around it, and what might inspire more of it—not just on GivingTuesday, but year round.

The GivingTuesday team has created a collaborative research platform and data pool for multiple organizations, data scientists, and academics to analyze and build data-informed analysis tools to benefit the broader social sector. The project has expanded to include more than 60 partners in the US and collaborating teams in 50 countries, including a broad collection of transactions and campaign data spanning ten years of donations from every day of the year. The work of the collaborators is guided by working groups convened around a variety of specific giving arenas: crowdfunding, workplace giving, donor-advised funds, fintech, higher education, charities, impact measurement, and academic researchers.

> Across the board, we heard from experts on the need for massive amounts of data to scale AI for philanthropy. No single nonprofit is going to be able to generate that much data.

GivingTuesday has also used artificial intelligence tools on a number of projects to gain insights about donor storytelling and the triggers for giving with data collected through #mygivingstory, using natural language processing and image-identification algorithms to learn more about what inspires giving, and developing machine-learning algorithms to classify organizations from online text.

GivingTuesday's data work has identified innovative practices to help grow giving. Data and Insights Lead Woodrow Rosenbaum says that using artificial intelligence has potential, "because it can find the unexpected links. The bigger the haystack of data, the easier to find insights."

Rosenbaum echoes other challenges that are discussed in depth in the next section. He suggests that an organization must begin with strategy questions or identifying a problem to solve before turning to AI methods. "Our approach is to use AI when it's the right solution. Don't reach for the AI hammer before you know if you have nails."

Rosenbaum also emphasizes that it is important to understand whether your data is amplifying confirmation bias. "The data we select for AI to analyze will dramatically affect the outcomes, and existing assumptions in the sector are often going to be inherent in those data selections."
The Fundraising Effectiveness Project or FEP[18] is another example of a data collaborative focused on gaining a deep understanding of giving across multiple sources of data about donations collected from nonprofits. The lead sponsors are the Association of Fundraising Professionals

18 http://afpfep.org/

(AFP) and the Center on Nonprofits and Philanthropy at the Urban Institute. Data partners include: Bloomerang, Donor2/Campus Management Corporation, DonorPerfect Fundraising Software, eTapestry (Blackbaud), GiftWorks (Mission Research), MatchMaker FundRaising Software, Metafile Information Systems Inc., PhilanthrAppeal (FundTrack Software), Raiser's Edge (Blackbaud), ROI Solutions, Telosa Software Inc. (Exceed!).

"The bigger the haystack of data, the easier to find insights."

The goal of the FEP is to increase giving at a faster pace by providing sector-level data and analysis about fundraising practices to nonprofits. The FEP is using machine-learning analytics to answer questions such as "What is the donor retention rate?" and "How can it be improved?"

REPORTING & WORKFLOW TOOLS

Machine learning and natural language processing are being used to generate reports, approve content on a platform, deliver customer service, and complete other rote tasks. GlobalGiving, DonorsChoose, Crisis Text Line, and USA for UNHCR shared examples of incorporating AI into their efforts in this way.

DonorsChoose is using off-the-shelf solutions such as customer service bots that automate their platform's technical support to help both fundraisers and donors solve technical issues that get in the way of posting a project or making a contribution. This allows teachers to post projects faster and donors to find a project and make a contribution faster.

As Mohammad Radiyat, data scientist at DonorsChoose, points out, "We're testing out a customer service bot, from an outfit called Talla, that can answer some customer questions directly and learn from the questions that customers ask. If needed, customers can still reach a real person. But for many questions our hope is that customers wouldn't have to wait for our staff to respond or wade through a lot of support documentation to find their answer. When a donor gets stuck, they get frustrated and are unlikely to make a contribution."

GlobalGiving Data Scientist Nick Hamlin says they have implemented natural language processing tools to perform preliminary review of required quarterly donor reports. The reports are valuable stewardship vehicles in building a long-term relationship between organizations and donors and avoiding a transactional approach. The reports allow the donor to track the impact of the organization's program over time. Once posted the reports are automatically emailed to donors who have opted-in to receive them.

The natural language analysis goes through the reports before they reach the humans on the program staff. The tool flags problem areas or says the report is okay. If flagged, the program staff fix the problem. This is a good example of how AI becomes an important part of the human team, or "cobots" as some call the integration.

Hamlin notes that GlobalGiving has used other off-the-shelf machine-learning (ML) products for internal operations. One important area is fraud detection. Says Hamlin, "We use products that use machine learning to help us identify potential fraudulent activity on the site so we can

take action accordingly. Tools like this tend to be particularly effective because they often work with many different companies and can take advantage of network effects when creating their models."

USA for UNHCR has an internal innovation unit of data and analytics experts to analyze data on the interaction between the organization and constituents. Says Rita Ko, "We use the in-bound call centers to better understand our supporters' interests and motivations on what they want to learn about as well as to collect their feedback. We have real staff who take the calls. The data is unstructured in audio format. It is then transcribed from the audio to text and then we use natural language processing to gather insights that can be applied to improve the supporter's journey. AI is going through enormous amounts of data and is able to distill it so staff can take action to improve the donor experience."

AI is going through enormous amounts of data and is able to distill it so staff can take action to improve the donor experience.

Current State of Artificial Intelligence Adoption

In November 2018, McKinsey released the results of its Global Survey on artificial intelligence. The vast majority of survey respondents reported rapid adoption of AI and expected only a minimal effect on eliminating staff positions or head count. Forty-seven percent of respondents say their companies have embedded at least one AI capability in their business processes. Most companies were deploying artificial intelligence via pilot projects or a single business function area as opposed to using it enterprise-wide or across multiple business units.[19]

These challenges echo what we heard from platforms, fundraisers, and other social sector experts. Often enterprises are looking for a mythical data science expert, but AI is actually a team sport, requiring business analysts, developers, marketers, and more working together.

The survey also revealed that few companies have in place the foundational building blocks that enable AI to generate value at scale. One barrier preventing full-scale adoption is the lack of digitization of its core workflows. Another challenge was finding skilled people to implement it effectively. These are two challenges affecting philanthropic and nonprofit adoption of AI as well.

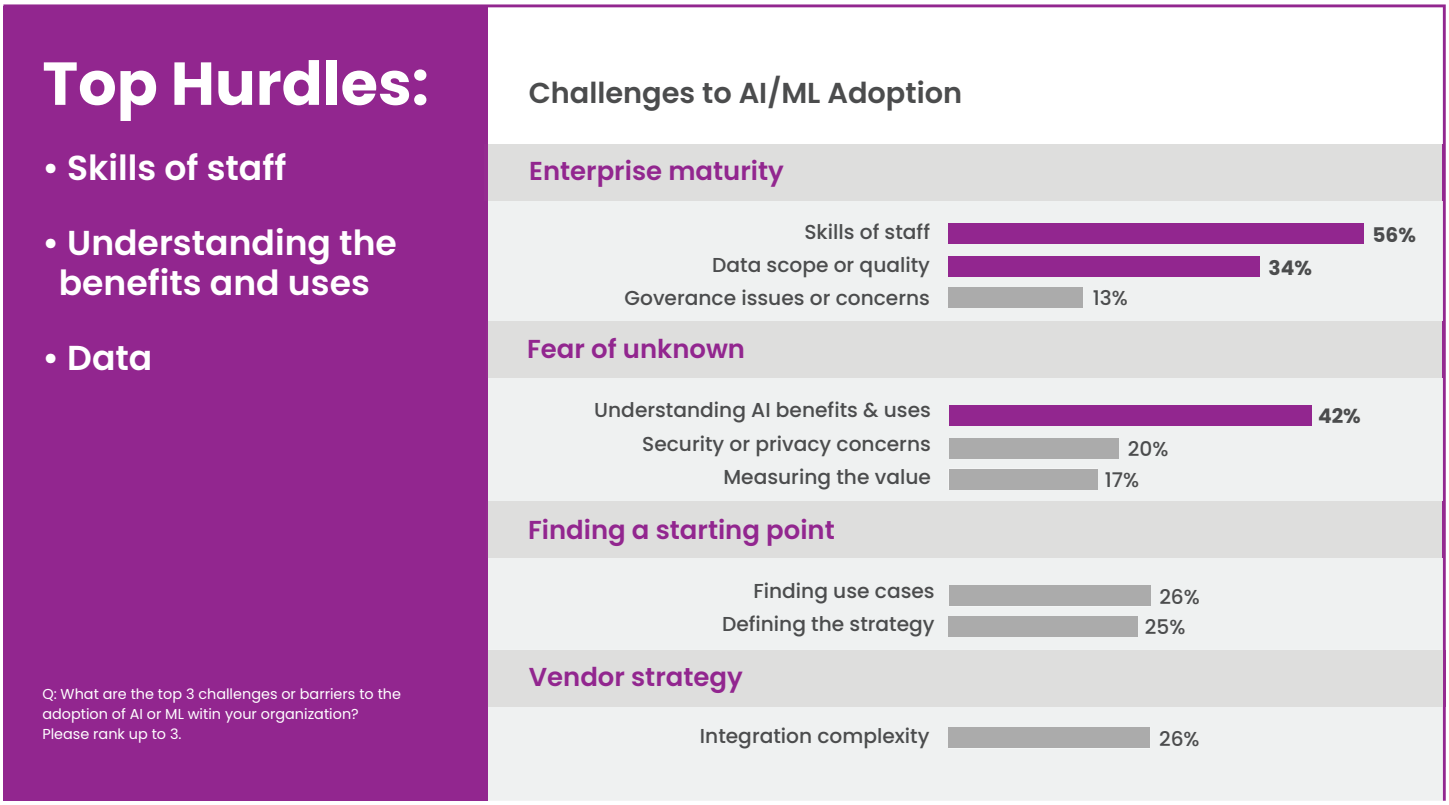
In October 2019 at the Gartner Annual IT Symposium, analysts reported the results of a recent adoption survey that found that the growth of AI applications had slowed from the previous year. The percentage of companies reporting deployment of AI had slipped from 23 percent to 19. The top concerns are the lack of skills on staff, the quality of the data they have available, and understanding the real benefits and uses of AI.[20]

19 https://www.mckinsey.com/featured-insights/artificial-intelligence/ai-adoption-advances-but-foundational-barriers-remain

20 https://www.pcmag.com/article/371612/gartner-the-present-and-future-of-artificial-intelligence

These challenges echo what we heard from platforms, fundraisers, and other social sector experts. Often enterprises are looking for a mythical data science expert, but AI is actually a team sport, requiring business analysts, developers, marketers, and more working together.

Figure 6: Hurdles and Challenges[21]



McKinsey analyzed adoption in the "Artificial Intelligence for Good" field in a discussion paper published in December, 2018.[22] The paper analyzed 160 AI social-impact use cases, and identified and characterized ten domains where adding AI to the solution mix could have large-scale social impact. Real-life examples show AI already being applied to some degree in about one-third of these use cases, ranging from helping blind people navigate their surroundings to aiding disaster relief efforts. McKinsey identified four large domains—health and hunger, education, security and justice, and equality and inclusion—where the potential usage frequency of artificial intelligence is high and where typically a large target population would be affected.

Significant bottlenecks for AI adoption, according to the report, are data accessibility and talent scarcity. In many cases, sensitive or monetizable data that could have societal applications are privately owned or only available in commercial contexts where they must be purchased and are not readily accessible to social or nonprofit organizations. Bureaucratic inertia often keeps data that could be used to enable artificial intelligence-driven solutions locked up. Finally, in many cases, the needed data have not been collected.

Artificial intelligence is not a "set it and forget it" technology. It requires ongoing monitoring and oversight, meaning it requires high-level expertise to do well. Talent with high-level AI expertise

21 https://www.pcmag.com/article/371612/gartner-the-present-and-future-of-artificial-intelligence

22 https://www.mckinsey.com/featured-insights/artificial-intelligence/applying-artificial-intelligence-for-social-good

is in short supply, at a time when competition for it from the for-profit sector is fierce. There has not been a comprehensive artificial intelligence adoption survey of the nonprofit sector. The few surveys that have been completed indicate strong interest in adoption of AI but show implementation at the early stages of development.

- **Online Fundraising and Marketing Campaigns**: Salesforce published a research report in June, 2019 on marketing and engagement tools, channels, and strategies for nonprofit organizations. They found that most nonprofits, particularly larger organizations, plan to focus on social media, advertising, fundraising and email marketing to build out their marketing strategy over the next three to five years. Four in ten anticipate focusing on artificial intelligence as part of their near-term marketing strategy.[23]

- **Major Gifts Officers:** "The State of AI In Advancement Report,"[24] a 27-page survey released by the AI In Advancement Advisory Council (AAAC), polled 210 advancement professionals, completing the survey in spring, 2019. The AAAC considers this first report to be a benchmark on the state of AI in the industry; they intend to update it annually. The survey found that adoption was in the very early stages. Fifteen percent of respondents reported using AI in their advancement efforts but almost three-quarters of those surveyed said they are still in the research phase or have no plans for the technology. That's despite 89 percent of respondents agreeing that AI will make their advancement team more efficient.

- **Nonprofit Fundraisers:** "The State of Artificial Intelligence in the Nonprofit Sector" survey in 2019[25] found that nonprofit practitioners are aware of AI, with 59 percent hearing about artificial intelligence from their CRM providers. Nonprofits believe that AI will make their lives easier. However, there are reservations. Many nonprofits—83 percent—believe an ethical framework an ethical framework needs to be defined first. Nonprofit-specific AI is not widely adopted today but it is beginning. Most nonprofits are using well-known apps such as Facebook, while nonprofit-specific AI is reaching less than 23 percent of nonprofits.

Table 4: Adoption Levels: Artificial Intelligence for Giving[26]

Adoption Phase	Description
Crawl	Not on their radar or roadmap or in early discussions
Walk	Internal automation tasks using mostly off-the-shelf models
Run	Features integrated into the platform or tool that help donors and fundraisers increase giving more efficiently
Fly	Meta-analysis across different platform data sets looking at donor behavior and generosity that generates insights to increase giving

23 https://www.salesforce.org/nonprofit/communicate/marketing-and-engagement-report-download/

24 https://gravyty.s3.amazonaws.com/2019aaacstateofaiinadvancement.pdf

25 Jared Sheehan & Tim Sarrantonio, The State of Artificial Intelligence in the Nonprofit Sector, 2019

26 We are not including large platforms like Facebook and SalesForce.Org in this framework.

AI is being integrated faster for commercial applications and for social good applications than for philanthropy to date. It appears that it is easier to make the case for a robot to automatically flip hamburgers than to find prospective donors. We heard a widespread assumption that AI will be integral to fundraising in the near future—but not quite yet. This moment in time is similar to what the field experienced with social media in the early 2000s. There was a growing array of tools for use by nonprofits, but exactly how to use them and the ramifications of integrating them into practice were still unsettled. The significant barriers to adoption of AI for philanthropy include a lack of ideas, talent, data, and technology infrastructure. These challenges and bottlenecks are discussed in Part 3 of this report.

Adopting Artificial Intelligence to Improve the Donor Experience

When thinking about deploying artificial intelligence for giving, the place to start is with human-centered design methods such as personas, empathy maps, and other techniques. The important question to understand is how the use of the technology solves a particular problem for the donor. AI embedded in philanthropy needs to incorporate "heartificial intelligence" or understanding the donor's needs.

Personas are one technique in a broad methodology called human-centered design that helps organizations design campaigns or platforms based on empathy with the end user. They include information about donor characteristics, needs, motivation and behavior. Using a persona to help determine user experience on a platform or communication messages for donors to unlock giving are considered a best practice.

Figure 7: Donor Personas [27]

PERSONA	ATTITUDES	LARGEST BARRIER
 *John* **CONTENTED BENEFACTORS**	20% of donors *"Giving has been part of my life for some time, and it makes me happy."*	High satisfaction with giving
 *Jill* **BUSY IDEALISTS**	15% of donors *"I try to find the time and money, and I wish I coud do more.:"*	Feeling overwhelmed
 *Jacob* **CAUTIOUS STRIVERS**	14% of donors *"I want to pay it forward, but I'm not yet in a position to do so."*	Concerns about not being equipped to make a good decision or give
 *Jennifer* **UNAWARE POTENTIALS**	28% of donors *"Giving is just not a priority for me."*	Not aware of how giving measures up
 *James* **UNENGAGED CRITICS**	23% of donors *"I have the money but I don't see the point in giving.."*	Lack of trust in nonprofts and beneficiaries

MOST LIKELY TO INCREASE/SHIFT GIVING

27 http://www.cambercollective.com/moneyforgood

While personas are typically personalized for the specific platform or campaign, there has been some research that combines interviews with survey research to create general personas for fundraisers and platforms that many can use. One example is "Money Good Personas." (See above)

In its early years, Philanthropy Cloud was described by employees as too time-consuming to find causes they cared about. In 2015, Salesforce.org refocused its efforts using donor personas. Nick Bailey, vice president of innovation and products, notes, "With workplace giving, employees fall into one of two categories. Some employees want a social experience with their team or work colleagues: 'Let's all go and volunteer at the local school.' But other people have very specific actions they want to take, like walking the dogs at the local animal shelter. And that's where AI comes in." Philanthropy Cloud, "can help employees find and connect with the causes they're passionate about. It allows us to do personalized philanthropy at scale."

Philanthropy Cloud, "can help employees find and connect with the causes they're passionate about. It allows us to do personalized philanthropy at scale."

Chris Noessel, senior design lead for Sterling Business Assistant at IBM, has coined the term "agentive design" to describe a new generation of human-centered design techniques to use when designing intelligent agents or chatbots. In his book "Designing Agentive Technologies: AI That Works for People," Noessel's user design framework offers a set of questions around these concepts: prepare, optimize, advise, automate, reduce, and finish.

"When designing agentive technology, you embody the user's intent in the machine. The metaphor is less like designing a hammer, but rather a robotic butler that does what you want to have done."

To understand the nuanced difference between designing an interface for a website and doing so for an intelligent agent, Noessel uses the example of designing for a manual vacuum cleaner versus a robotic one. "They both will clean your floors and carpet because they have an electric motor that creates suction and it is used to collect dirt. The obvious difference is that the robotic vacuum cleaner is agentive, meaning it can do its job without a human by using artificial intelligence." He says, "When designing agentive technology, you embody the user's intent in the machine. The metaphor is less like designing a hammer, but rather a robotic butler that does what you want to have done."

Google has recently published People + AI Guidebook focusing on "participatory machine learning," which actively involves a diversity of stakeholders: technologists, UXers, policymakers, end users, and citizens. The guidebook provides an overview of how human perception drives every facet of machine learning and offers up worksheets on how to get user input. The guidebook stresses the importance of aligning your AI project with users' needs. Talking to users, looking through data, and observing behaviors helps shift from technology-first to users-first.

The right starting questions to ask include:

- Which user problems is AI uniquely positioned to solve?
- How can we augment human capabilities in addition to automating tasks?
- How can we ensure our reward function optimizes AI for the right thing?

Human-centered design methods that prioritize empathy with end users including existing donors, potential donors, or staff who use the tools are the starting point for adopting AI. Increasingly the use of human-centered design methods will become critical to improving the donor's experience using AI. Designing based on donor personas and empathy maps provides an important understanding of what the donor sees, how they feel, and the right touch points. Artificial intelligence should be deployed when it can help automate or better scale interactions with the donor. This is the pathway toward unlocking generosity.

PART 3

THE ROAD AHEAD

Challenges & Bottlenecks

Our research indicated clear patterns in how the field is developing, and specific benefits for using AI for philanthropy in the short-term. Further developments and scaling will require overcoming the challenges and bottlenecks faced by the platforms:

1. Using AI to scale bad fundraising practices
2. Limited platform data capacity and AI talent
3. Lack of transparency
4. Inequality
5. Lack of donor curiosity and obligatory giving
6. Shiny object syndrome
7. Ethical challenges

The question we should pose is whether the way fundraisers ask people to give now is something we want to scale?

The use of artificial intelligence to scale better and more giving is promising, but it also comes with many impediments.

1. USING AI TO SCALE BAD FUNDRAISING PRACTICES

On the supply side of fundraising, fundraisers are under tremendous pressure to meet immediate budgetary needs. These transactional norms, however, are having a deleterious effect on the field—particularly in the area of donor retention. Transactionally-focused relationships keep donors at a distance and result in abysmal donor retention rates. Typically, a nonprofit loses sixty percent of donors after year one and is down to ten percent of the original donors by year five.[28] To date, AI-driven features for fundraising on platforms are maintaining and reinforcing the status quo in terms of being transactionally focused. As Brigitte Hoyer Gosselink of Google says, "AI won't fix bad fundraising practices. So, the question we should ask is whether the way fundraisers ask people to give now is something we want to scale?"

Rosenbaum of GivingTuesday says, "Too often, the engagement with donors is purely transactional. We are in competition with one another. We need to change this behavior. We need to give fundraisers amazing tools, but the practice of fundraising also needs to change. Shared datasets are the key. You can see donor behavior not just within your organization, but across the field."

"The problem is that the most generous people tend to get hammered with requests," according to Ben Miller, chief analytic officer of EveryAction. "This is a bad practice. It leads to donor fatigue. Human data scientists have to build models with best practices in mind."

2. LIMITED PLATFORM DATA CAPACITY AND AI TALENT

Another key barrier to widespread adoption by platforms that surfaced many times during our interviews is data capacity. This includes the lack of enormous, clean data sets, well-designed

28 https://philanthropy.blogspot.com/2019/04/nonprofits-and-artificial-intelligence.html

categorization glossaries, and the specific talent necessary for effectively implementing AI. This is beyond the reach of most nonprofits as well as the smaller platforms we interviewed.

One of the largest relevant data sets that does exist, the IRS 990 nonprofit tax returns, are incomplete and have a one-year time lag. In addition, the data is not categorized in a donor-friendly way and the dataset often has to be recategorized before it can be used to train an algorithm.

"Shared datasets are the key. You can see donor behavior not just within your organization, but across the field."

We heard from some platforms that testing of donor-matching algorithms faces a myriad of challenges in terms of the completeness of their data sets, especially in the philanthropic advising area. Often, the donors' past donations are not fully captured in the platform, causing the algorithm to make recommendations that are not only inaccurate, but potentially offensive. Adding to the problem is that the data needs to be categorized with a robust glossary, a difficult and time-consuming design and testing process.

Crisis Text Line's chief data scientist and co-founder Bob Filbin visited a dozen nonprofit data centers as part of developing their in-house data strategy. He identified the following common challenges:

- **Incomplete and inaccurate data:** Without data engineers on staff, designing and implementing large-scale data collection and analysis efforts is impossible.

- **Ease of collection:** Successful data collection has to be as automated as possible. Individual nonprofits are often performing duplicate data entry. At scale, collection costs have to approach zero in order to free up time for analysis.

We heard similar challenges from platforms that are working with nonprofits and their data sets on tools that incorporate artificial intelligence. According to France Hoang of boodle.AI, "The biggest challenge in implementing AI is getting good data. Nonprofits can use their donor and prospect lists; however, the problem with this data is that it is often messy, contains duplicates, or information is too skinny [not enough variables]." Hoang says that these flaws make it difficult to train an algorithm to be accurate.

"The biggest challenge in implementing AI is getting good data."

Data limitations for nonprofits make the role of platforms vitally important in integrating artificial intelligence to scale giving. But platforms also face a talent hurdle. At the smaller platforms, typically there is one data scientist on staff, not a team of people who possess diverse skill sets and the expertise required for effective implementation and sustaining artificial intelligence applied to giving. Says Give Lively's DeParolesa, "Our only limiting factor is not imagination but it is the ability to find talent to implement."

Data scientists at smaller platforms are generalists and well-equipped to identify off-the-shelf machine-learning applications and running small experiments for use cases such as internal

reporting. But use cases such as matching models require more capacity, not only to implement but also to sustain over time. One technology expert we interviewed for this report noted, "They [data scientists] don't exist as ones, they exist in herds and need to bounce ideas off of each other."

Furthermore, to allocate their time on artificial intelligence for giving requires being able to make a good ROI case because the data scientists' time is highly sought-after for other types of data projects that do not require machine-learning expertise. Says Oliver Hurst-Hiller, chief technology officer and head of product at DonorsChoose, "We struggle with the balance of long-term investment for a potentially large yield versus data projects that deliver immediate results. AI's ability to expand philanthropy is still unproven and so there's some understandable resistance to investing too much time in experiments at this stage." Says Nick Hamlin, data scientist at GlobalGiving, "While I'm perfectly happy to experiment with building new machine learning models from scratch to help us expand giving, I'm still a one-person team working at a nonprofit, so there are lots of other demands on my time. In many cases, it often makes more business sense for me to focus first on using other models, tools, and open source frameworks that already exist."

Data limitations for nonprofits make the role of platforms vitally important in integrating artificial intelligence to scale giving. But platforms also face a talent hurdle.

As Anna Bethke, head of AI for social good at Intel AI Products Group, has learned from Intel's AI investments in nonprofits, "Ideally, the organization needs artificial intelligence expertise and capacity to continue to deploy and monitor the project. Artificial intelligence projects require constant attention. It isn't a 'set it and forget it.' In some cases, there have been capacity issues with deployment because a proper staffing plan wasn't established."

3. LACK OF TRANSPARENCY

Artificial intelligence, unlike previous generations of digital tools, is invisible to the end user. A user doesn't interact directly with the code and can't see the wheels turning. Indeed, not knowing that one is interacting with AI or a bot is becoming more a part of everyday life for everyone.

Artificial intelligence projects require constant attention. It isn't a 'set it and forget it.'

The general lack of transparency in the field of AI means that larger platforms that own enormous amounts of data have no obligation to be transparent or accountable to the larger social change community. This situation is reminiscent of the recent history of social media with regards to how data are used, or more accurately, misused.

In a post about nonprofits and artificial intelligence, Stanford University philanthropy scholar Lucy Bernholz also points out that we should focus not only on how nonprofits are using the tools, but also on the very important ethical concerns. "The real issue is how large data sets (with all

the legitimate questions raised about bias, consent and purpose) are being interrogated by proprietary algorithms (non-explainable, opaque, discriminatory) to feed decision-making in the public and private sectors in ways that fundamentally shift how the people and communities served by nonprofits/philanthropy are being treated."[29]

It is imperative that nonprofits and platforms have outside advisory boards to open up the black box on how their algorithms are making decisions. USA for UNHCR's Rita Ko reports, "In 2017, we created a data advisory board of 15 industry experts [representing] many cross-disciplines: academics, researchers, techies, data scientists, etc. They are all experts in the AI, data, and ethics conversations, but bring different lenses. They are executives and thought leaders in data science and machine learning."

"The real issue is how large data sets are being interrogated by proprietary algorithms (non-explainable, opaque, discriminatory) to feed decision-making in the public and private sectors."

4. INEQUALITY

The initial use of AI for philanthropy may potentially skew toward better-resourced platforms and nonprofits. As Rhodri Davies, head of policy for Charities Aid Foundation, says, "This is likely to result in well-understood causes and well-known organizations being promoted to potential donors at the expense of less-well-known ones." He continued that this situation can be remedied with the code, but it would have to be a very intentional strategy to ensure that potential supporters are presented with information on smaller or newer organizations.

"This is likely to result in well-understood causes and well-known organizations being promoted to potential donors at the expense of less-well-known ones."

5. LACK OF DONOR CURIOSITY AND OBLIGATORY GIVING

This barrier was cited by those we interviewed when looking at using artificial intelligence to generate recommendations to donors of advised funds (DAFs). Our interviewees said that internal research revealed that many DAF donors already know where they want to give and are likely not to need a donor-matching engine. This suggests three hypotheses that require further testing:

- ***Donors give to the organizations they are already giving to because they know them and have not been offered a set of new and relevant options***. An AI algorithm might unlock new connections for donors and nonprofits and make both sides better off. The potential result: nonprofits get money to do the work; donors get to support new programs and feel good about it. Money can flow in more informed ways that unlocks more resources.

- ***Donors don't have the time, interest or know-how to do the research to get smarter about giving to an organization or an issue.*** AI could automate results data. It could make it easier for a donor to ask for comparisons between the organizations they donate to already and other

29 https://philanthropy.blogspot.com/2019/04/nonprofits-and-artificial-intelligence.html

organizations working on the same issue. This could be part of their decision-making, freeing up time for the donor to take that initial research deeper. The potential result: donors are more satisfied and organizations more effective.

- ***Donors do obligatory giving and even if AI algorithms delivered the information, it would not change their giving behavior.*** The potential result: organizations learn how to target investments in AI for the greatest ROI.

According to the experts we interviewed, many donors log into their donor dashboards already knowing which causes they are giving to. They are not interested in surfing or shopping for a cause. However, what hasn't been fully tested is giving DAF advisers better tools and information to explore based on their particular interests. It remains an open question whether donors are curious and open to giving to new causes by using platforms and tools.

6. SHINY OBJECT SYNDROME

While many of the experts we interviewed were excited about the rising interest in exploring artificial intelligence in the sector, they also identified the need for organizations to better understand what artificial intelligence is and when it is an appropriate technological solution.

Kriti Sharma says, "The biggest challenge is understanding that artificial intelligence can't solve every problem. You need to bring a variety of voices across the organization to the table, it can't just be the technical people. Technical people need people with domain expertise and the end users to help them imagine what the technology can do." Sharma says that nonprofits need to understand what is possible and ask the right questions.

Platforms are not immune to the hype. Says Hamlin, "AI is like hot sauce. A little bit, used in the right place, can be perfect. But dumping too much on or using it everywhere will probably ruin your meal. There's a lot of hype about AI and machine learning right now, so it's important to move mindfully and without optimizing anything prematurely. I think most people who work in data science are naturally excited about new technologies and drawn to exploring and tinkering with them. Still, we have to stay focused on delivering value for those we seek to serve instead of getting distracted by the promise of cutting-edge new tools."

> "AI is like hot sauce. A little bit, used in the right place, can be perfect. But dumping too much on or using it everywhere will probably ruin your meal."

Many platforms and nonprofits we interviewed described running experiments using machine learning, typically one-up analysis questions or projects. "If the experiment indicates that it's useful and the project makes sense, we'll move forward with putting it in production," notes Hamlin. "We experiment with many ideas that never make it into production"

Blackbaud's MacLaughlin summarizes the feelings about AI held by many nonprofits: "Nonprofits often think that AI is either magic or witchcraft. Instead, they should view AI as a way to help them

make better decisions." That skepticism, however, is not universal. MacLaughlin and others we interviewed shared examples of nonprofit fundraisers who did want to delegate some of the mundane tasks to the algorithms.

Given how quickly the field is developing, it is also difficult for nonprofit organizations to figure out best practices and best uses of AI. There is a pressing need for independent advice and guidelines on how to choose the tools that best meet organizations' goals.

"Nonprofits often think that AI is either magic or witchcraft. Instead, they should view AI as a way to help them make better decisions."

7. ETHICAL CHALLENGES

The technology will continue to develop at breakneck pace. There is an opportunity now to intentionally shape a new field of practice that balances the needs of organization and the needs of donors to deliver value to society at large. Without this intentionality, there is the real possibility that bad fundraising practices will continue unabated and ethical lapses will occur.

Issues for broad discussion:

- ***Open versus closed systems:*** We need transparent data systems and we need protections for clients and donors—limitations on how data are used—built into systems.
- ***Broadening the field of giving:*** How can well-known causes be promoted while also providing opportunities for smaller and newer causes to be discovered by donors?
- ***Data versus storytelling:*** Too often, the field of fundraising focuses on either data or storytelling. Good philanthropy requires both the head and the heart. Using AI, we can create new norms that include both.

Recommendations

Recommendation	Stakeholder
1. Use AI to expand the giving of everyday donors	Nonprofits
2. Create a relational model for fundraising	Nonprofits
3. Support data collaboratives and comprehensive outcomes data	Platforms Funders
4. Convene stakeholders to create ethical approaches to AI principles	Platforms Nonprofits Funders Policymakers
5. Increase nonprofit fundraisers' capacity to use AI tools	Funders Intermediary organizations Platforms

1. USE AI TO EXPAND THE GIVING OF EVERYDAY DONORS

Most philanthropic giving is done by individual donors, although the number of givers as a percentage of the population has recently fallen. Individuals tend to give to their religious organizations and schools, but there are opportunities to give more, faster and better when AI is incorporated into the giving equation.

Bromer of Salesforce/Nonprofit Cloud says, "AI-driven donor experience is a hyper-targeted offer to the donor and that is a far cry from classic giving models. AI is about customization at scale. AI can help an organization send people content or stories that are resonating with them personally, that keeps them engaged."

"AI-driven donor experience is a hyper-targeted offer to the donor and that is a far cry from classic giving models."

We envision three scenarios for expanded giving by everyday donors with AI:

- ***Real-time funding for emergency needs:*** The contours of an opportunity to scale giving to individuals who have emergency needs in real time is emerging. United Way of America supports a 2-1-1 system to connect people in need to local services. These data could be quickly transformed into a giving platform, a GoFundMe-style solution for people with current emergency needs, carefully maintaining anonymity for all concerned.

- ***Yelp for causes:*** Individuals give more when they are connected socially to other givers. The three greatest barriers to more individual giving to causes beyond schools and congregations are lack of knowledge, lack of data and lack of targeting. Systems to overcome these barriers are already wildly successful and scaled: Yelp, GoFundMe and Kiva are three examples of platforms that use crowds to rate businesses, tell stories and allow for ongoing relationship-building between a cause and givers. It is not difficult to imagine one platform that combines these attributes and is powered by AI, driving giving to causes that have been verified by crowds and over time.

- ***Lifestyle dashboard***: United Ways are at the forefront of creating a personal giving dashboard for workplace giving. This could be the beginning of an approach to philanthropy that stretches the notion of generosity. Omar Parbhoo, vice president at Ideas42, says, "Now, think about supersizing this to create a comprehensive giving profile for individuals that includes their donations, volunteering and purchasing in one place." This idea stretches the idea of philanthropy to include purchasing power as a powerful tool for change, alas, one that is uncounted to date.

2. CREATE A RELATIONAL MODEL OF FUNDRAISING

One of the biggest challenges in the field of AI is whether the technology can learn to respond empathetically to human emotions. Crisis Text Line uses AI to assess the emotional state of clients to provide the appropriate responses. Since 2013, more than 83 million messages have been exchanged through Crisis Text Line. "From the very beginning, we believed Crisis Text Line's data could save lives. So we built Crisis Text Line from the ground up around data and technology," says Filbin. He describes how data is always collected and always feeding back into the system to create improvements." NPQ Crisis Text Line

However, even if AI itself becomes more empathic, the current model of fundraising needs to become more relational and less transactional. According to the Donor Effectiveness Project, donor retention, or more precisely, the lack of retention, is a sector-wide malady. (https://bloomerang.co/retention) In general, forty percent of donors are retained after the first year of giving and only ten percent after five years.

Donors may drop off after attending a one-time event or giving through a friend. However, a more significant reason for drop-off is the limited staff time for continuous engagement and education.

Incorporating AI into fundraising efforts can free staff and key volunteers to focus on donor retention. Organizations have much to learn about the whole lives of their supporters: what interests them, what concerns or moves them to act, what they aspire to. Just as important, organizations have much to learn about how they make supporters feel. Does participating with this cause increase joy, or do people feel like ATM machines? The key question is whether organizations are interested in moving from a transactional model of fundraising to a relational one. The evidence of such interest is discouragingly low.

The key question is whether organizations are interested in moving from a transactional model of fundraising to a relational one.

Efforts like boodle.AI alerting fundraisers of donors likely to lapse are helpful beginnings. More helpful would be a model that remakes the engagement between causes and donors. The use of AI could shift the norms of fundraising. Here's how a human-centered design approach to fundraising could unfold:

- Causes use AI to pinpoint their most likely donors;
- Donors learn more about the cause through storytelling mechanisms such as videos and in-person events;
- Donors are connected socially to other activists to learn more about a cause and why its fans support it;

- The cause asks for a contribution, but only after the third touch;
- After a contribution is made, regardless of its size, there is a human conversation between the cause and the donor. How did it feel to donate to the cause? What could make it feel more meaningful, more joyful? What information or results would promote continuing support?

> "DonorsChoose will always put our customers first, which requires a high level of customer service. AI has the potential to help us do that. But we don't anticipate it obviating the role of human-to-human contact."

As Hurst-Hiller and Radiyat from DonorsChoose say, "At the end of the day, DonorsChoose remains a high-touch business. We will always put our customers first, which requires a high level of customer service for teachers and donors. AI has the potential to help us do that by making us more efficient. But we don't anticipate it obviating the role of human-to-human contact in our operation."

3. SUPPORT DATA COLLABORATIVES AND COMPREHENSIVE OUTCOMES DATA

The only way to create large enough data sets for AI to be useful for a broad array of nonprofits is through data collaboratives and open data sets where the key ecosystem players contribute anonymized data. Initial efforts to create data collaboratives are underway with GivingTuesday's Data Collaborative and the Fundraising Effectiveness Project. However, much more work needs to be done to create data collaboratives across the field of social change. Herein the needs for transparency and accountability will be paramount to assure the ethical use of the data.

The lack of data on outcomes is not a new topic in the field of social change. What is new is the computing power of AI to make sense of enormous amounts of data. But the challenge that has always existed continues: identifying the measures to use for outcomes by issue area. Institutional philanthropy can use its convening power to help develop baseline metrics for effectiveness with nonprofits and fund data collection efforts to create larger data stores of outcomes data.

> The challenge that has always existed continues: identifying the measures to use for outcomes by issue area.

4. CONVENE STAKEHOLDERS TO CREATE ETHICAL APPROACHES TO AI PRINCIPLES

Philanthropy has a role to play in bringing together major technology, philanthropy and nonprofit players to establish norms for ethical engagement with AI. The good news is that there is a body of work to build on for ethical use of data and AI, not only from the commercial sector but also from efforts by organizations like Gravyty to jumpstart these same guidelines for nonprofits. See Addendum C for a proposed checklist.

5. INCREASE NONPROFIT FUNDRAISERS' CAPACITY TO USE AI

Institutional philanthropy has an urgent and important role to play in shaping the nascent field of AI4Giving, particularly by increasing nonprofit fundraisers' capacity to use the tools of AI by providing:

- "Consumer Reports" style papers that guide nonprofit fundraisers in their choice of AI-driven platform. Such reviews might include a description of features, pricing, and other information as well as effective ways to make the decision whether to use the platform.
- A directory connecting platform-neutral intermediary consultants with nonprofits.
- Educational opportunities such as webinars, workshops, articles, white papers, and other educational offerings to help nonprofits become smarter consumers of AI technologies.
- Use of extant data sources: As mentioned above, recent funding competitions for AI 4Good efforts received an overwhelming number of proposals. This happens often in the sector across issue areas. The funded and unfunded proposals may be of interest to other funders. The same approach can be applied to research reports and final grant reports to aggregate outcomes data. These are also sources of data on nascent approaches. Allison Lowndes of NVIDIA says, "The most exciting and positive scenario for AI in philanthropy would be to use it to analyze a large number of research studies and make predictions about where to invest. Think about philanthropy and fundraising—is there a data/analytical task that is not yet fully automated or could be scaled up to free up time for the nonprofit staff to focus on the human interaction with the donor?"

Conclusion

We hope that this report provides a roadmap for ways to support the use of AI4Giving that increases the efficiency of fundraising staff (e.g. identifying donors who are about to lapse) as well as increasing the awareness of donors to new causes and organizations. We hope that staff members will also take the time previously spent on administrative tasks and devote more time to in-person conversations with donors and volunteers, building deep and long-lasting relationships.

> It requires leadership from nonprofit and philanthropic people and institutions to insist that the technology serve humanity and not the other way around.

This is a critical moment in time for leading players, particularly institutional philanthropy, to shape the norms and practices early, to ensure that at least a portion of the field remains dedicated to ethical and democratic practices. We know what happens to commercial technology when revenue needs outweigh privacy and ethical considerations. This is the moment to ensure that doesn't happen again, but it requires leadership from nonprofit and philanthropic people and institutions to insist that the technology serve humanity and not the other way around

ADDENDA

ADDENDUM A: INTERVIEW LIST

Nick Bailey
Vice President, Innovation and Products
Salesforce

Matrika Bailey-Turner
Former Director, Social Innovation
Case Foundation

Anurag Banerjee
Co-Founder and Chief Executive Officer
Quilt.AI

Amir Banifatemi
General Manager, Innovation & Growth
Xprize

Anna Bethke
Head of AI for Social Good
Intel AI Products Group

Celia Black
Chief Marketing Officer
Kurzweil Technlogies

Adrian Bordone
NPO Practice Manager
Amazon Web Services

Danah Boyd
Principal Researcher
Microsoft

Kevin Bromer
Former Vice President, Product Delivery
Salesforce/Nonprofit Cloud

William Browning
Chief Strategy and Transformation Officer
United Way Worldwide

Ben Cipollini
Data Scientist
QuickOwl LLC

Rhodri Davies
Head of Policy
Charities Aid Foundation

David DeParolesa
Chief Executive Officer
Give Lively

Bob Filbin
Chief Data Scientist and Co-Founder
Crisis Text Line

Jake Garcia
Vice President for Data and Technology Strategy
Candid

Sarah Gelfand
Vice President, Social Impact Programs
Fidelity Charitable

Sam Gill
Senior Vice President and Chief Program Officer
Knight Foundation

Brigitte Hoyer Gosselink
Head of Product Impact
Google.org

Alix Guerrier
Chief Executive Officer
GlobalGiving

Brady Hambleton
Vice President, Marketing, Engagement & Analytics
Canada's Children's Hospital Foundations

Nick Hamlin
Data Scientist
GlobalGiving

Ruixi Hao
Program Officer
Bill & Melinda Gates Foundation

Janet Haven
Executive Director
Data & Society Research Institute

France Hoang
Co-Founder and Chief Strategy Officer
boodleAI

James Hodson
Chief Executive Officer
AI for Good Foundation

Oliver Hurst-Hiller
Chief Technology Officer and Head of Product
DonorsChoose

Dean Karlan
Co-Founder and Chairman
ImpactMatters

Rita Ko
Director, The Hive
USA for UNHCR

Allison B. Lowndes
Artificial Intelligence DevRel | EMEA
NVIDIA

Steve MacLaughlin
Vice President, Product Management
Blackbaud

Adam Martel
Chief Executive Officer
Gravyty

Jane Meseck
Senior Director, Tech for Social Impact
Microsoft Philanthropies

Ben Miller
Chief Analytic Officer, DonorTrends
a Division of EveryAction

Chris Noessel
Senior Design Lead, Sterling Business Assistant
IBM

Beth Noveck
Director
The Governance Lab

Cullen O'Keefe
Research Scientist for Policy
OpenAI

Omar Parbhoo
Vice President
Ideas42

Tess Posner
CEO
Ai4All

Mohammad Radiyat
Data Scientist
DonorsChoose

Lee Rainie
Director, Internet and Technology Research
Pew Research Center

Woodrow Rosenbaum
Data and Insights Lead
GivingTuesday

Ettore Rossetti
Senior Advisor, Digital & Marketing Innovation
Save the Children

Douglas Rushkoff
Author and Host of Team Human
Professor of Media Studies
CUNY/Queens College

Tim Sarrantonio
Director of Strategic Partnerships
Neon One

Andrea Schiller
Senior Product Marketing Manager
Salesforce.org

Kriti Sharma
Founder
AIforGood UK
Advisor
UN Technology Innovation Lab

Jared Sheehan
CEO
PwrdBy

Michael Thatcher
President and CEO
Charity Navigator

Stefaan Verhulst
Co-Founder
The GovLab
Senior Advisor
Markle Foundation

Naroa Zurutuza
Applied AI and Information Poverty Lead,
Unicef Office of Innovation

ADDENDUM B: INTERVIEW QUESTIONS

PLATFORMS

- How is your platform currently using AI to support fundraising? Why are you integrating AI?
- How exactly is AI being integrated into your platform?
- How will philanthropy or giving be better/improved as a result of integrating AI?
- What opportunities do you see for the entire sector beyond your platform?
- AI can generate a lot of data; If you have gathered and analyzed whole-platform data, what have you learned about increasing giving or the barriers to giving from this data that you can share?
- How is the donor experience different/better as a result of the integration of AI? Are you using AI to help individual donors determine who and what to give to? To encourage donors to give more or better?
- Do you have donor case studies or experience data you can share with us?
- Has your platform discussed or developed a set of ethical guidelines for incorporating AI?
- What are your greatest hopes/fears of using AI to increase philanthropy?

THOUGHT LEADERS

(Nonprofits using AI for programs & other thought leaders around use of AI in society)

- Our main task is to look at AI and giving. We are aware that there are a number of applications and initiatives by nonprofits to integrate AI into programs and other areas, but what are some of the most exciting and positive scenarios for using AI for unleashing generosity or fundraising? What is possible in this next chapter that hasn't been possible to date?
- Have you seen or heard about any innovative uses of AI to scale generosity in the nonprofit sector? Any efforts that could potentially be scaled?
- What system would you create from scratch to unleash generosity at scale?
- What are some of the potential or current challenges to incorporating AI into philanthropy?
- What does the sector need to be prepared? Who should lead?
- How can this next chapter stay human-centered?

NONPROFITS

- We are primarily investigating AI in philanthropy and giving. How and why are you incorporating AI into your fundraising or other areas? Has the use of AI changed your fundraising practice in any way? For example, are you using it to strengthen relationships and engagement and retention versus prospecting?
- How did you develop the expertise to incorporate AI into your work?
- What has been challenging/exciting about this effort?
- How would you do it differently if you were starting over?
- Have you thought about the ethical boundaries for this work? If so, how, and do you have written ethical policies for the incorporation of AI into your work?
- If you could look into a crystal ball five years from now, how do you anticipate the impact of AI on your donors' experience or capacity to raise more money?

FUNDERS

- What is on your radar in terms of AI investments in the sector?
- What other foundations are investing in AI in the sector?
- What do you imagine as the key benefits for the sector in terms of fundraising and philanthropy?
- What do you see as the key challenges?
- What do you think the sector needs to be prepared to adopt AI?

ADDENDUM C: ETHICS CHECKLIST

Artificial intelligence is not intelligent enough to understand right from wrong, so it is up to platforms and users to incorporate their values and moral principles for ethical use.

PLATFORMS

- Articulate values and examine the trade-offs of values-based decisions.
- Protect the privacy of end users by anonymizing any data that is used for research or shared and create protocols for handling personally identifiable information.
- Follow the highest standards for data security, especially data of at-risk populations, and have a risk-mitigation plan in place.
- Recruit for diversity of backgrounds and experience to avoid internal biases.
- Cultivate a culture of ethics that goes beyond statements and incorporates empathy for the end user affected by the platform, through training, DEI audits, and experts advisory groups.
- Use design thinking and other participatory methods to test and get stakeholder feedback to avoid systemic social inequalities in data used to train AI algorithms.
- Be transparent about how algorithms are created and how decisions are made.
- Give users control over their data.
- Incorporate feedback and reporting processes to ensure that stakeholders' data is respected, transparency is upheld, and everyone understands the proper use of AI and its potential misuse.

NONPROFITS

- Outline ethical uses of artificial intelligence in fundraising so as not to cross the line into manipulation.
- Have a clear purpose for use of AI-powered tools and pressure-test ideas with experts.
- Test datasets and models for potential data bias.
- Articulate what donors and others need to know to engage with these systems.
- Disclose to end users whether they are communicating with a real person or a chat bot.
- Follow privacy and security guidelines that protect end users' data.
- When deciding whether to use a particular platform, review their ethical guidelines, data and security privacy protections, and understand how their algorithms make decisions.

FUNDERS

- Ensure that grants to support AI projects are reviewed for ethical use and include an ongoing mechanism for reviewing any concerns with grantees.

ADVOCACY & POLICY ORGANIZATIONS

- Encourage broad adoption of privacy and security principles for all platforms.
- Encourage nonprofits, funders, and platforms to share best practices and promote codes of conduct.
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- Promote ethics training for all stakeholders.

ADDENDUM D: RESOURCES

RESEARCH

Fundraising
Machine Made Goods: Artificial Intelligence in Giving & Philanthropy
Overview by Charity Aid Foundation of the current use of AI and the potential in the charity sector

Venture into the Future of Giving
Paper by the Economist commissioned by the Bill and Melinda Gates Foundation that looks at a wide range of emerging technology, including Artificial Intelligence, and the potential impact on philanthropy

State of Artificial Intelligence in Advancement/Major Donors
Survey of adoption for major gift officers from Gravyty

AIForGood
Applying Artificial Intelligence for Social Good
Landscape analysis of AI4Good by McKinsey

Accelerating Social Good with Artificial Intelligence: Insights from Google Impact Challenge
An analysis of the over 2,600 applications received from the Google Impact Challenge on the benefits, challenges, and opportunities; also includes a useful taxonomy of project design, specific type of AI used and data sets

AI4Good Summit
Annual conference that showcases research and prototypes in the AI4good field

X-Prize AI Impact Maps
Maps the current projects, opportunities, and challenges in specific problem areas

Artificial Intimacy - Aspen Digital 2020 Report

AI4GOOD MAJOR PLAYERS: TECHNOLOGY COMPANY PROGRAMS

Microsoft
Google
Salesforce
Intel
IBM

ARTICLES & BLOG POSTS

Chatbots
Leveraging the Power of Bots for Civil Society: SSIR by Beth Kanter and Allison Fine
Provides an overview of opportunity & challenges of chatbots for civil society and a variety of use cases

AI for Fundraising Today: Chatbots and Voice-Activated Fundraising by Beth Kanter
Overview of chatbots and voice-activated technologies for fundraising campaigns

AI for Fundraising: Special Report by the Chronicle of Philanthropy
The potential of artificial intelligence to improve fundraising and the concerns that some in the charity world have about the new technology

Machine Learning

What Your Nonprofit Needs to Know About Machine Learning by GlobalGiving
A good primer on readiness

Demystifying Machine Learning for Global Development by Sema Sgaier
What nonprofits doing development work need to understand about AI4Good

Artificial Intelligence: Snake Oil or Nonprofit Tool
Looks at the current use and potential of AI for online advocacy campaigns

WHITE PAPERS AND REPORTS FROM AI VENDORS

Nonprofits & AI E-Book from Salesforce.Org
Provides an introduction to what AI is and how your nonprofit can benefit using Salesforce.Org's product Einstein for nonprofits

AI 101 for Nonprofits from boodle.AI
Provides a primer for nonprofit professionals to understand the fundamentals of artificial intelligence and its subset, machine learning, how they work, and how to evaluate and categorize AI technology they may encounter

WITH THE SUPPORT OF

BILL & MELINDA GATES foundation

Alison Fine photo by Margaret Fox

Contact authors Beth Kanter or Allison Fine