

AI AND THE FUTURE OF GENEROSITY



Nathan Chappell
BTFRI, August 6, 2019

ABOUT ME

Nathan Chappell, MBA, MNA, CFRE

20 years in fundraising

Started and sold two tech companies prior to nonprofit career

Never intended to go to college but was forced by my girlfriends father

Consultant and leader at a wide variety of nonprofit organizations

Launched Futurus Group in 2019 with focus on gratitude over wealth



OLD CHALLENGES WITH MODERN SOLUTIONS

ARISTOTLE BARRIERS

*“To give away money is an easy matter and in anyone’s power. But to decide to **whom** to give it and **how large** and **when**, and for **what purpose** and **how**, is neither in every individual's power nor an easy matter.”*

Aristotle

ARISTOTLE BARRIERS

Philanthropist Barrier

1. Whom to give to
2. How large to give
3. When to give
4. What purpose to give
5. How to give

Fundraising Barrier

1. Whom to ask
2. How large to ask
3. When to ask
4. What gift opportunity
5. How to ask

ARISTOTLE BARRIERS

This is not a new concept, but the growth of philanthropic giving will be determined by whether nonprofit leaders learn how to embrace and leverage AI in a big way.



GIVING TRENDS – WHY IT MATTERS



GIVING TRENDS AND WHY IT MATTERS

- We're facing a fundamental shift in how giving has been conducted in the past.
- Does it matter?
- Why is it happening and what can we do about it?
- **Are we facing a generosity crisis?**

GIVING TRENDS AND WHY IT MATTERS

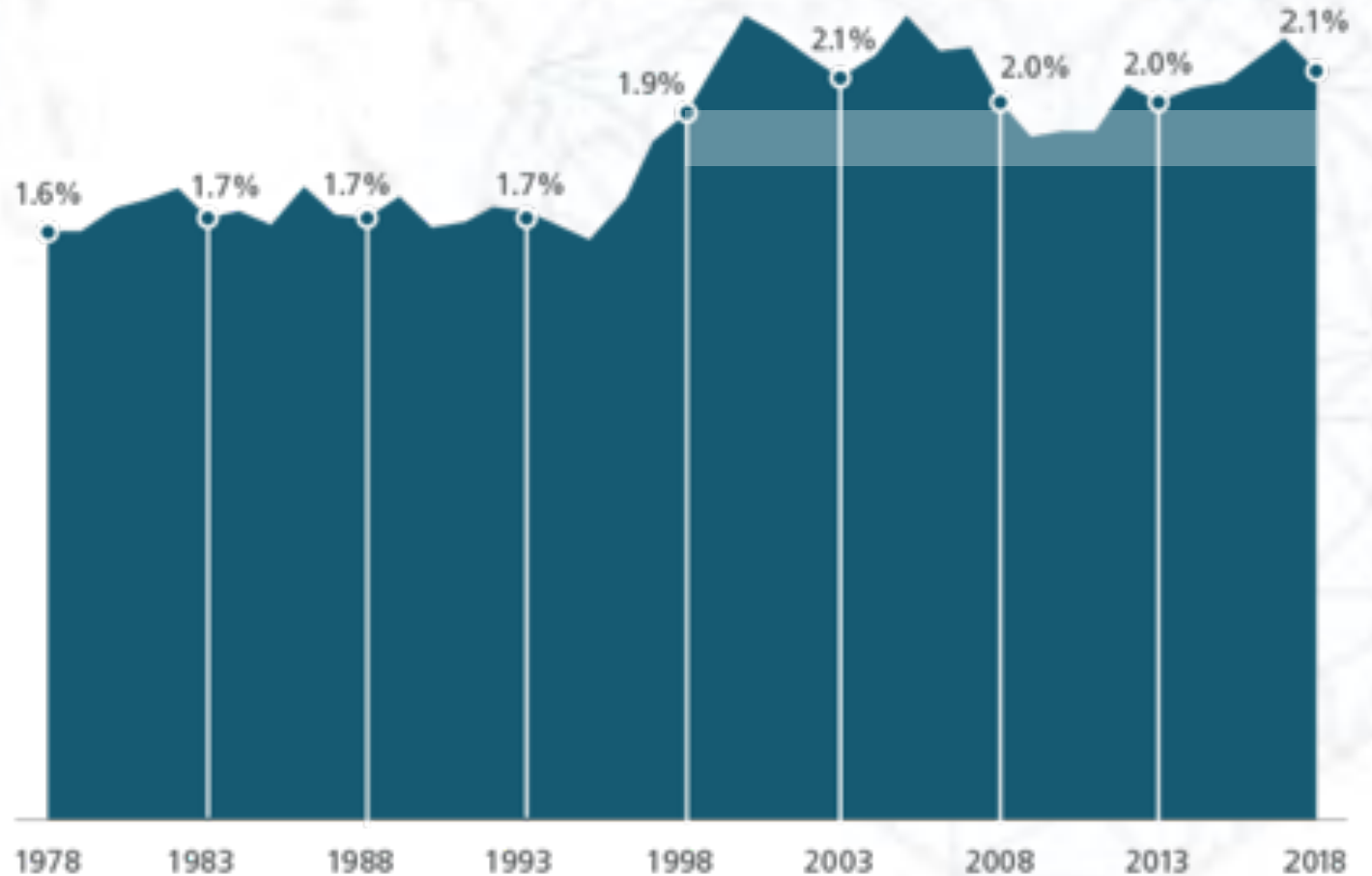


Giving hits \$427B
in 2018



GIVING TRENDS AND WHY IT MATTERS

When adjusted for inflation, giving remains at 2.1% of GDP.



Source: Giving USA 2019

GIVING TRENDS AND WHY IT MATTERS

03.07.19 | FUTURE OF PHILANTHROPY

Donations to charity plummeted last year (except from the super rich)

Giving to charity is down among middle- and low-income Americans, which means that the agenda of nonprofits is being ceded to the big donors.



03.07.19 | FUTURE OF PHILANTHROPY

Donations to charity plummeted last year (except from the super rich)

Giving to charity is down among middle- and low-income Americans, which means that the agenda of nonprofits is being ceded to the big donors.

2 MINUTE READ

One of the biggest criticisms on Republican tax plan that passed in late 2017 was that doubling of the standard deduction could lead to a [decrease in charitable contributions](#) from middle-class givers, because many people who previously itemized their charitable donations to boost their tax break would no longer be incentivized to do so. That's proving true.

Overall giving increased by 1.6% between 2017 and 2018, according to a [new report](#) from the [Fundraising Effectiveness Project](#), but that boost was driven entirely by the wealthy: people making gifts of \$1,000 or more. Gifts of up to \$250 and between \$250 and \$999 dropped about 4% each. The number of total givers dropped at about the same rate, alongside downward trending fluctuations for about every other variable by which nonprofit groups measure their fiscal health and stability. That includes the number of new donors that groups are attracting (it's down 7%) and the overall donor retention rate—people who give to the same group year-over year—is just 45.5% overall now.

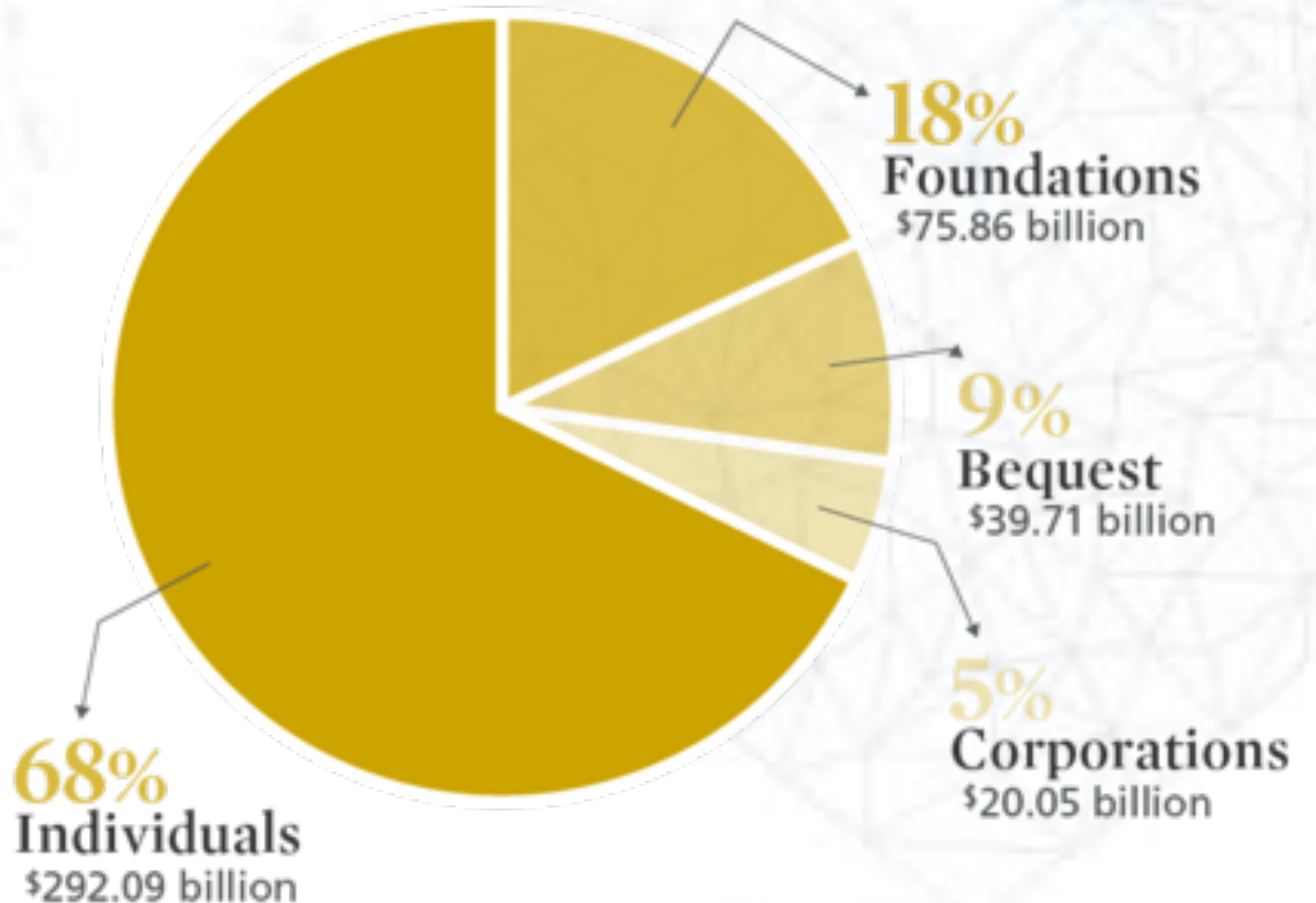
The data is based on a snapshot of the Fundraising Effectiveness Project's Growth in Giving database, which tracks transaction activity on fundraising platforms including Bloomerang, DonorPerfect, NeonCRM, and SofTrek . In this case, FEP analyzed a subset of 4,500 charities that have consistently raised at least \$5,000 from a donor pool of at least 25 people annually for at least six years running.

"I think the most surprising aspect was that giving went up at all," says Jon Biedermann, cofounder of FEP, who is also a vice president at [DonorPerfect](#), in an email to [Fast Company](#). That's because the last quarter of 2017 actually spiked, with many people seeming to front-load their giving amid the uncertainty of what might happen with the tax law. In comparing just the fourth quarters of 2017 and 2018, for instance, contributions are actually down in all three gift ranges, including the \$1,000-plus category.



GIVING TRENDS AND WHY IT MATTERS

Giving by individuals decreased from 70 percent of overall giving in 2017 to 68 percent in 2018. **This year is the first time giving by individuals has fallen below 70 percent of overall giving since at least 1954.**



GIVING TRENDS AND WHY IT MATTERS

Giving USA Special Report

FALL 2017

Giving to Religion

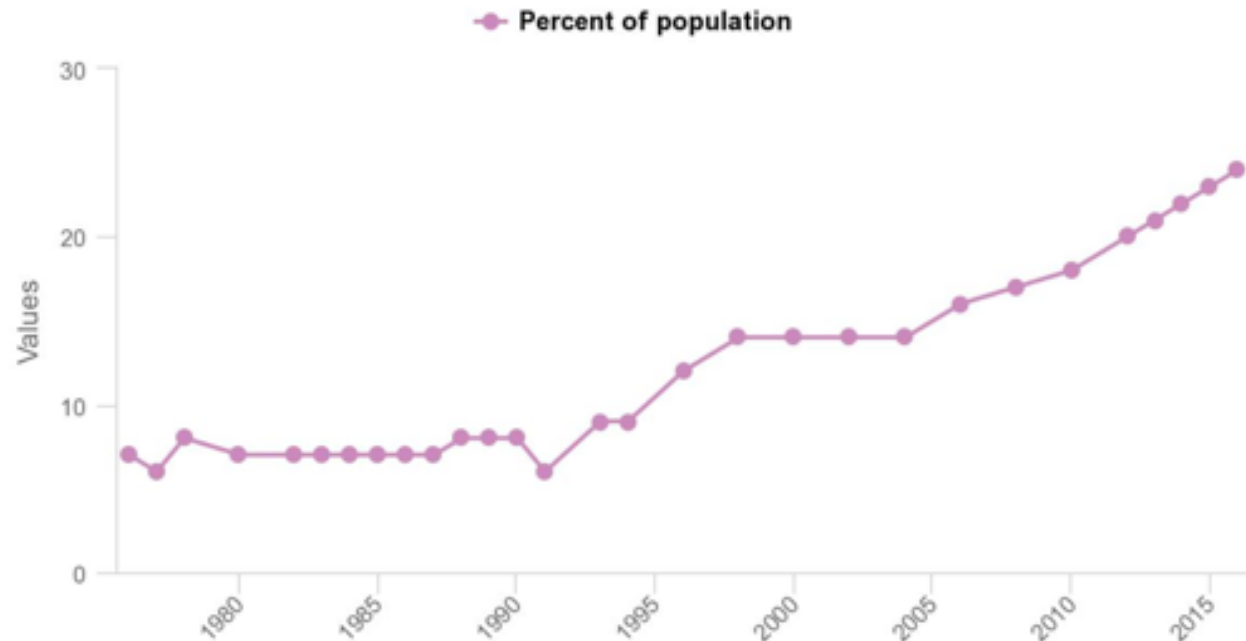
GIVING TRENDS AND WHY IT MATTERS

Religion makes up 30% of all giving but influences more than half.

62 percent of religious households give to charity, **only 46 percent of households with no religious affiliation make charitable donations.**

Households without religious affiliation give \$695 annually. Religiously affiliated households give \$1,590 annually.

Growth of the Religiously Unaffiliated, 1976-2016



Sources: General Social Survey, 1976-2012; PRRI 2013-2016 Americans Values Atlas.

GIVING TRENDS AND WHY IT MATTERS

Data and **tools** exist for the **first time in history** that can change the trajectory of the philanthropic sector.

Exciting times or inflection point?



WHAT IS AI ANYWAY?

How geek
are you?

Awareness of Artificial Intelligence (AI) technology According to Internet Users Worldwide, March 2017

I'm an expert

10%

I know what it is but am not an expert

53%

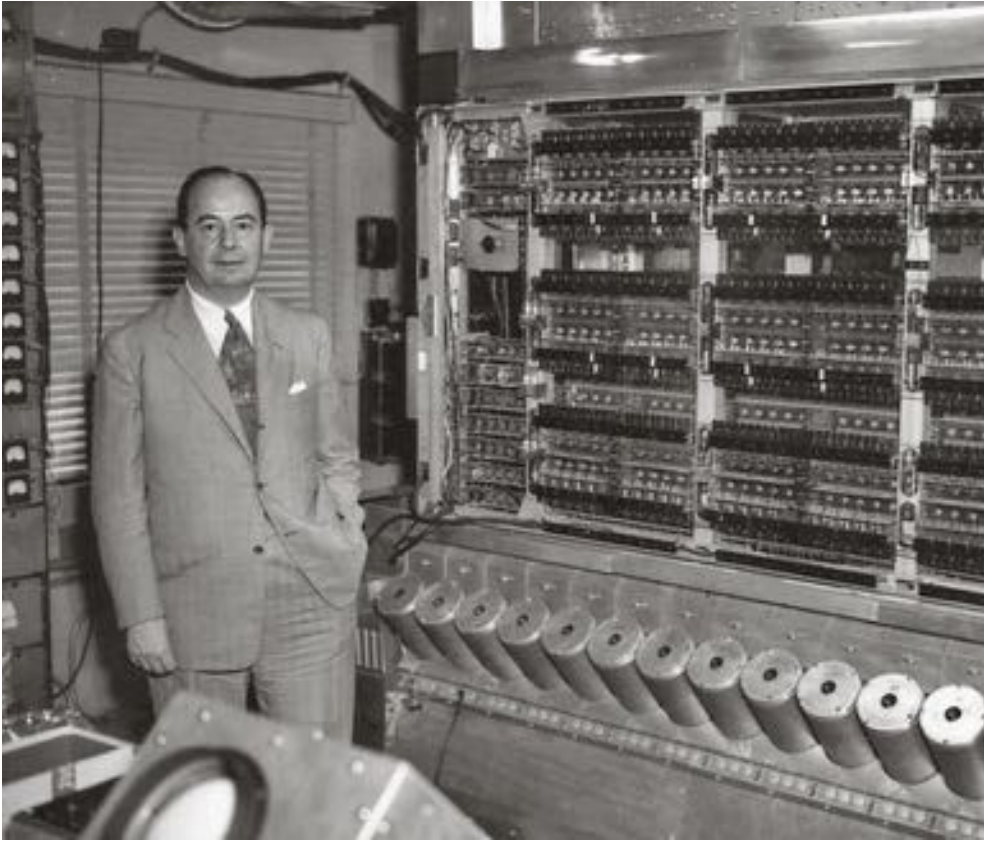
Heard of it but don't know much about it

30%

Don't know what it is

9%

WHAT IS AI ANYWAY?



In 1950 English Mathematician **Alan Turing** published a paper entitled “**Computing Machinery and Intelligence**”.

The **Turing test**, developed by Alan Turing in 1950, is a **test of a machine's ability to exhibit intelligent behavior equivalent to, or indistinguishable from, that of a human.**

WHAT IS AI ANYWAY?

Term “**Artificial Intelligence**” was coined by John McCarthy at Dartmouth in 1955.

Dartmouth: 1955-1956

MIT: 1956-1962

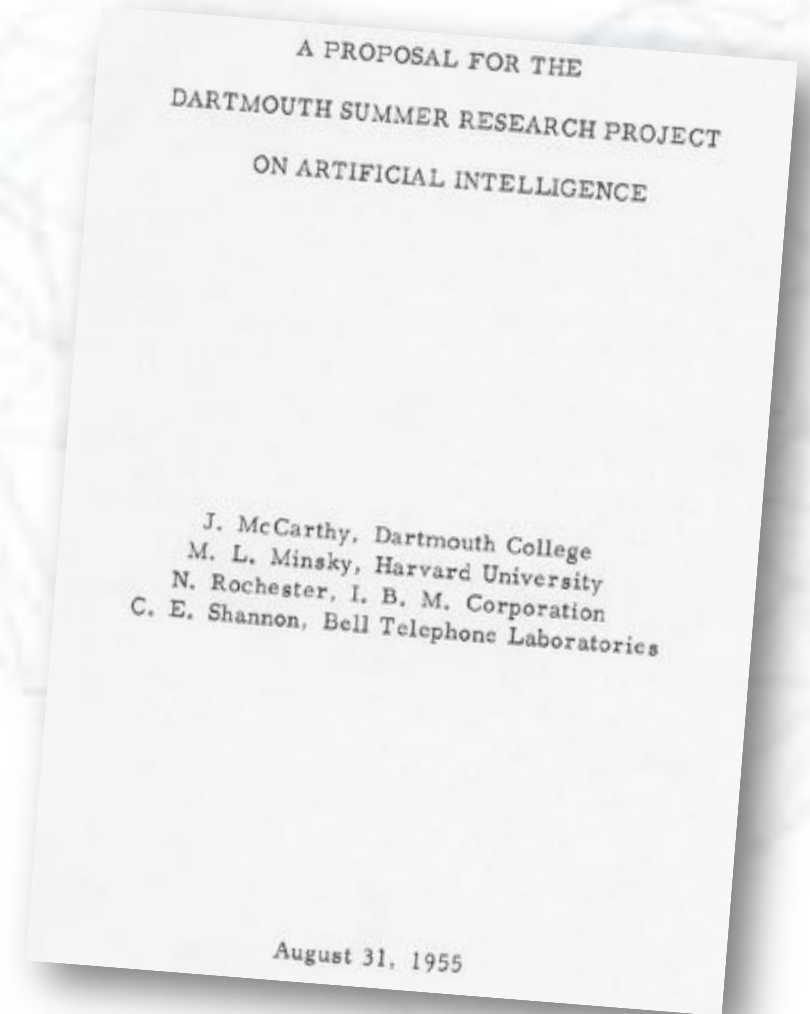
Stanford: 1962-2000 (retired)



WHAT IS AI ANYWAY?

A proposal for the Dartmouth Summer Research Project on Artificial Intelligence

“The study is to proceed on the basis of the conjecture that every aspect of learning or any other feature of intelligence can in principle be so precisely described that a machine can be made to simulate it.”

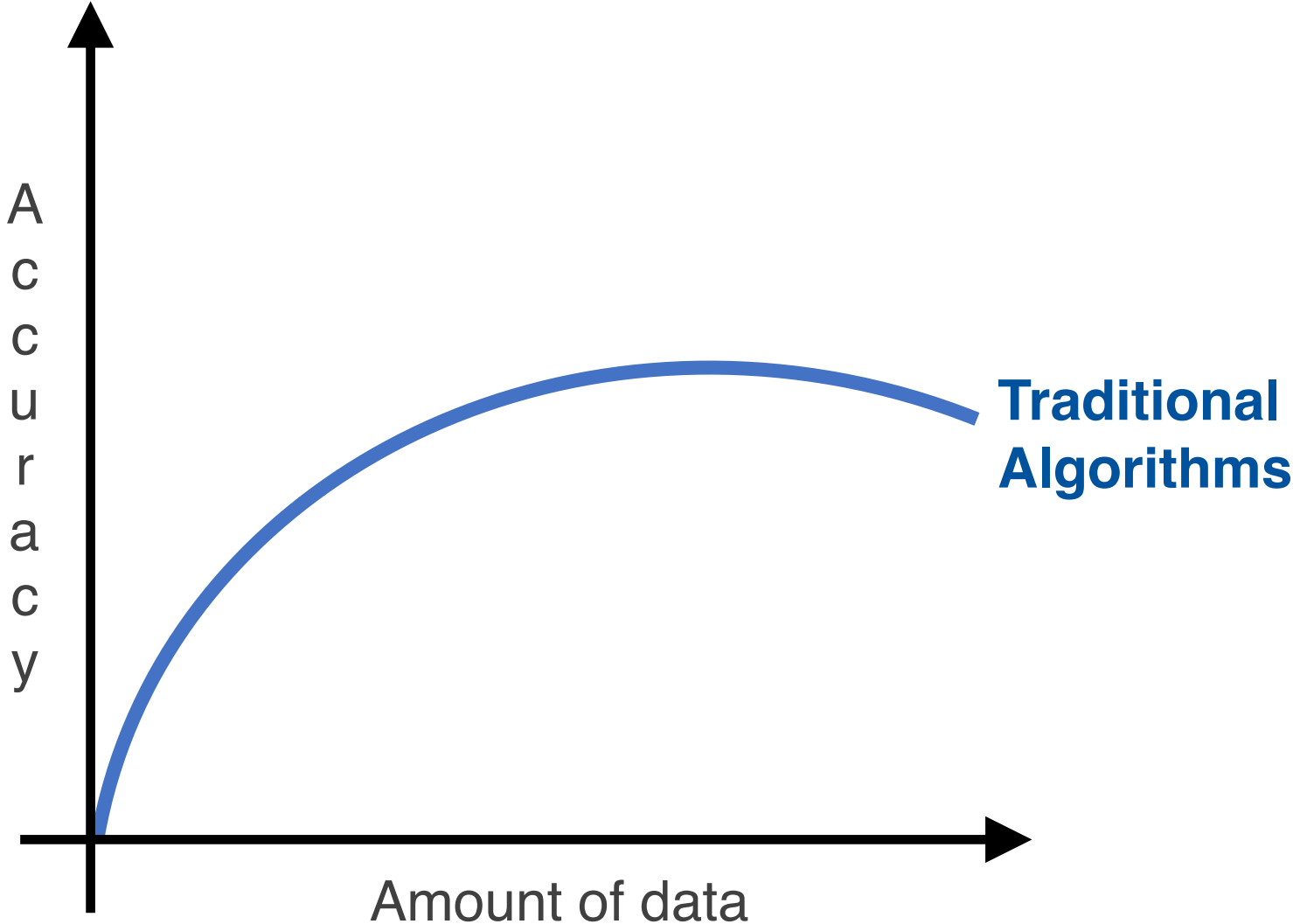


WHAT IS AI ANYWAY?

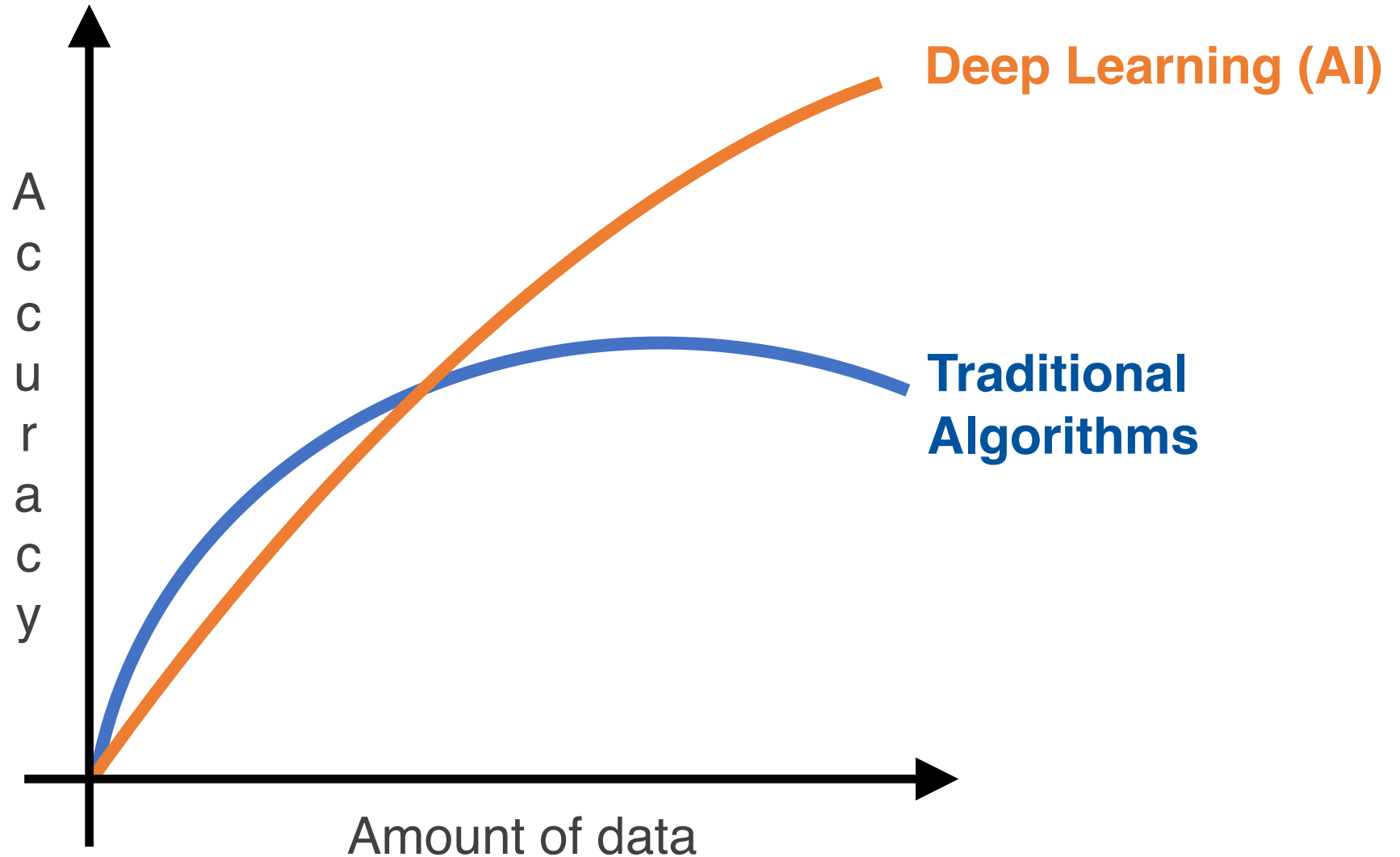
FOUR KEY AREAS OF AI DEVELOPMENT

1. **Machine Learning (ML):** statistical analysis, personalization....
2. **Natural Language Processing (NLP):** voice assistants, reading...
3. **Robotics:** factory robots, flight systems, autonomous vehicles...
4. **Image Recognition:** crime fighting, education, radiology...

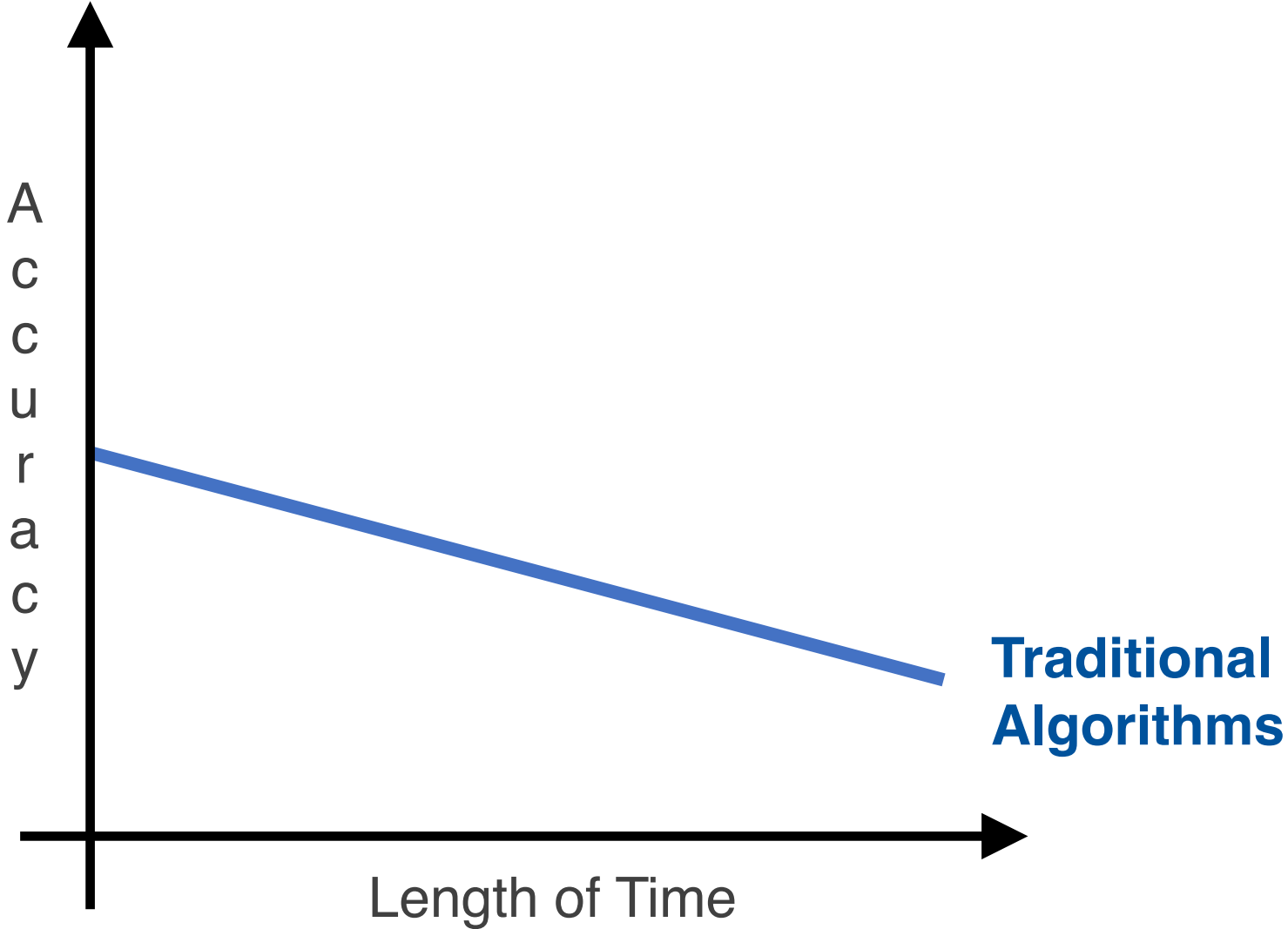
MACHINE LEARNING IN 2 SLIDES



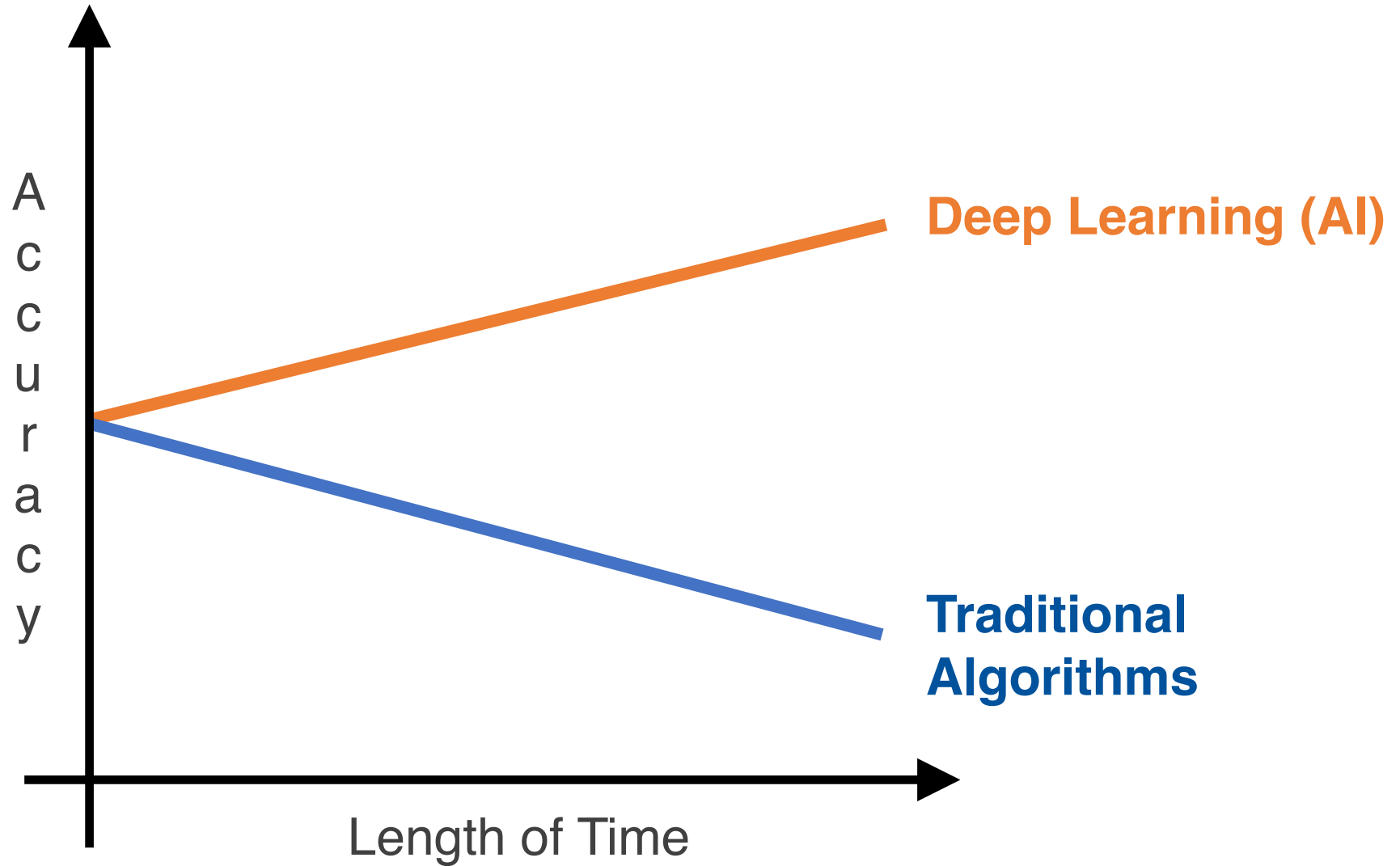
MACHINE LEARNING IN 2 SLIDES



MACHINE LEARNING IN 2 SLIDES



MACHINE LEARNING IN 2 SLIDES



WHAT IS AI ANYWAY?

Artificial Intelligence is the New Electricity — Andrew Ng

What is the future of A.I.?

It depends on who you ask...

But everyone is talking about it...

WHAT IS AI ANYWAY?

“AI is in a ‘golden age’ and solving problems that were once in the realm of sci-fi.”

Jeff Bezos



WHAT IS AI ANYWAY?

*“Artificial intelligence is our
biggest existential threat.”*

Elon Musk



WHAT IS AI ANYWAY?

“I do not agree with Elon Musk about AI. We shouldn't panic about it.”

Bill Gates





AI IN THE PRIVATE SECTOR

AI IN THE PRIVATE SECTOR

MIT Technology Review

Most Americans are already using AI

85 percent of Americans use navigation apps, streaming services, or ride-sharing apps—all of which make healthy use of AI.

AI IN THE PRIVATE SECTOR

The Amazon logo, featuring the word "amazon" in a bold, black, lowercase sans-serif font with a yellow curved arrow underneath it.The IBM Watson logo, with "IBM" in blue and "Watson" in a darker blue, followed by a trademark symbol.The Netflix logo, consisting of the word "NETFLIX" in a bold, red, uppercase sans-serif font.The Facebook logo, with the word "facebook" in a white, lowercase sans-serif font inside a dark blue rectangular box.The Google logo, with the word "Google" in its characteristic multi-colored sans-serif font.

- Increase accuracy, consistency and speed
- Enhance consumer satisfaction
- Improve decision-making
- Shift personnel efforts from mechanics to analysis
- Realize cost savings

AI IN THE PRIVATE SECTOR

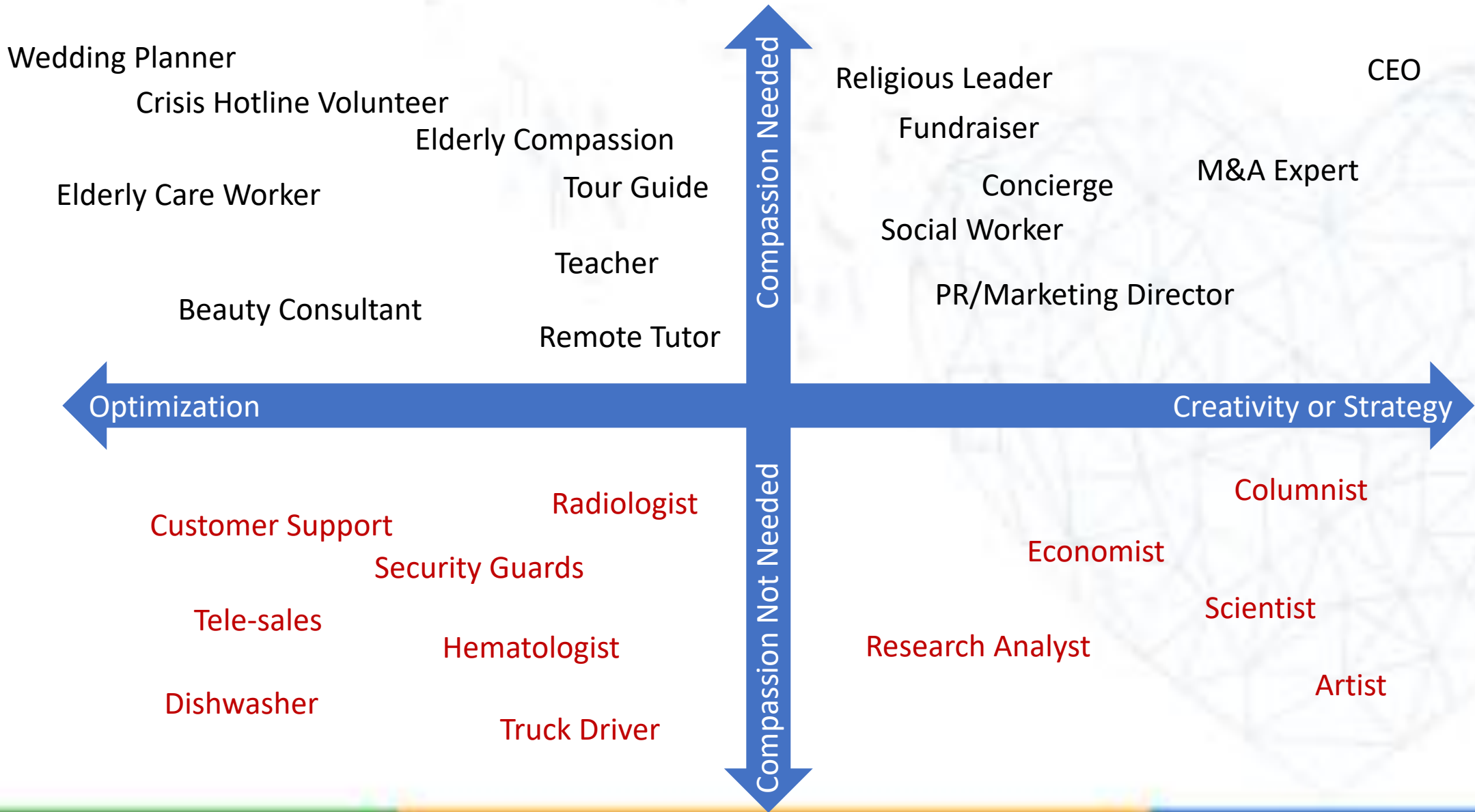
- Worldwide enterprise use of AI grew 270% over the past 4 years. (Gartner)
- Chatbots (Siri, Alexa, etc) will power **85%** of customer service by 2020.
- **The three most in-demand skills** on *Monster.com* are machine learning (ML), deep learning and natural language processing (NLP).

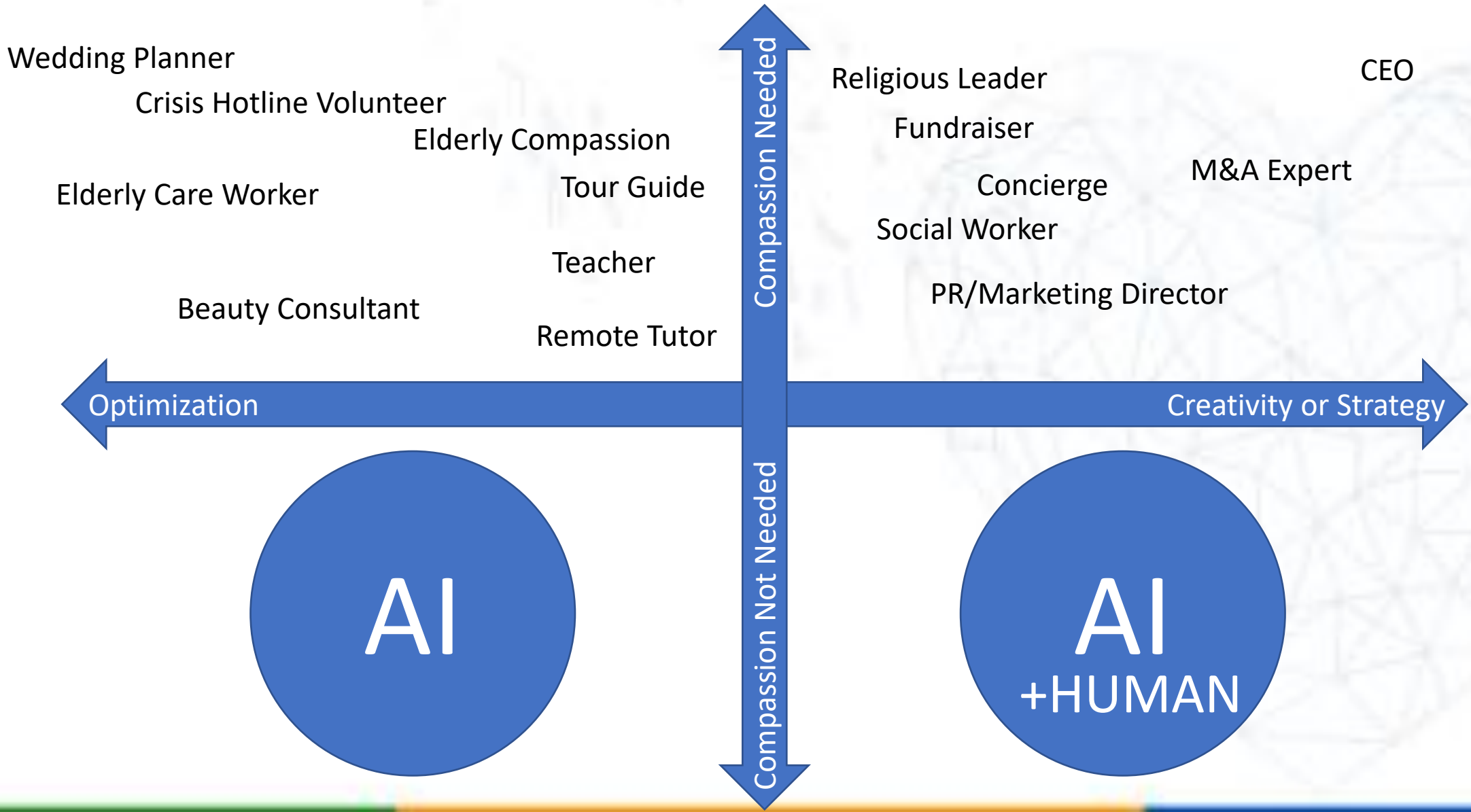


“Anywhere from 75 million to 375 million people globally will need to switch occupations by 2030.

McKinsey Global Institute Report, 2017







AI FOR GOOD



AI FOR GOOD

#1: Use artificial intelligence to transform operations

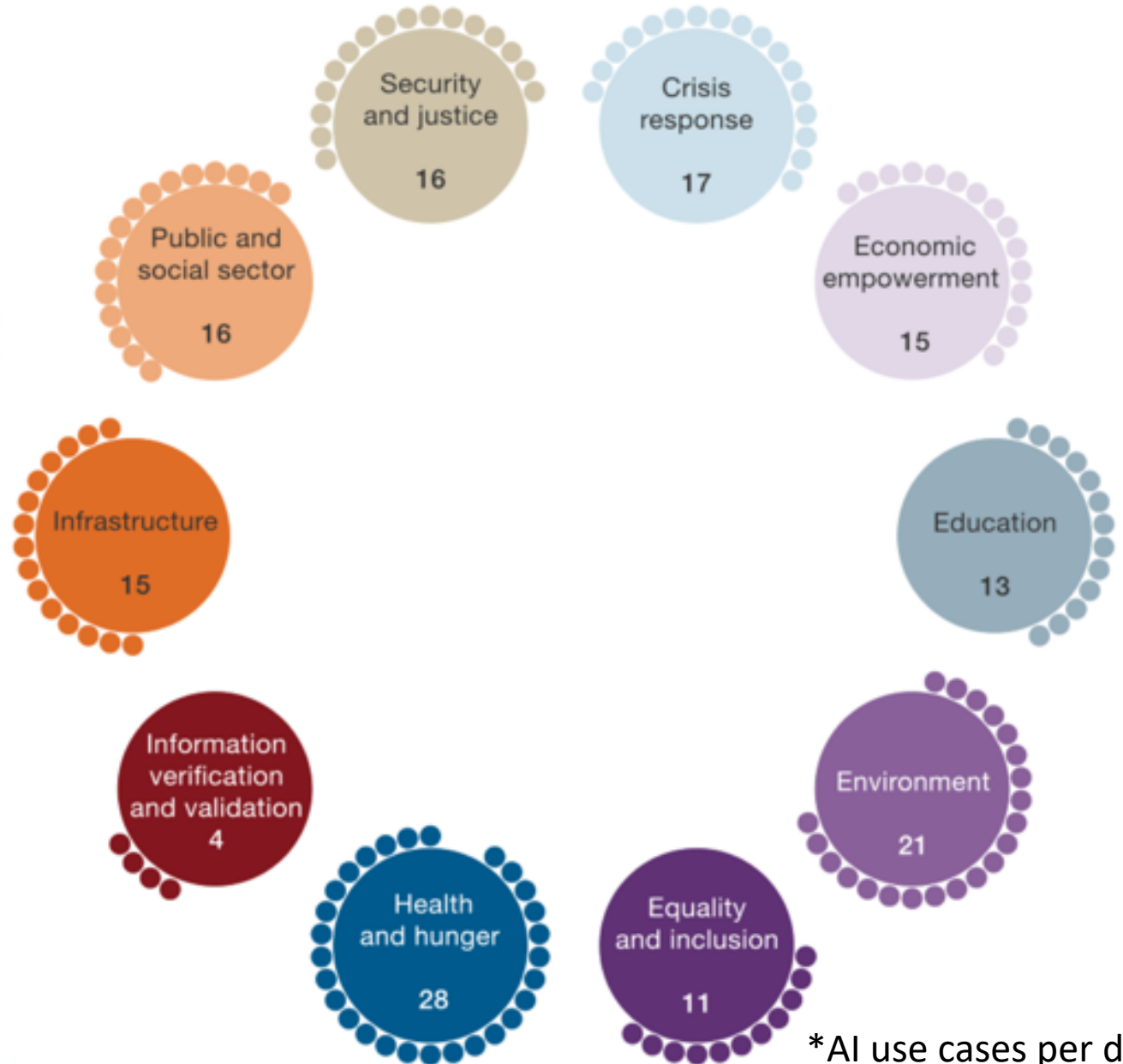
“As artificial intelligence (AI) becomes increasingly mainstream, leading not-for-profit organizations are beginning to utilize its different forms to transform business operations. These organizations should realize improved service quality in the form of increased accuracy, consistency and speed, greater constituent satisfaction, cost savings, and improved decision making.

Today’s AI comprises software that can analyze data, run scenarios, contemplate possible outcomes and take action — with or without human involvement.”



AI FOR GOOD

Artificial Intelligence has broad potential across a range of social domains.



McKinsey & Company

Source: McKinsey Global Institute analysis

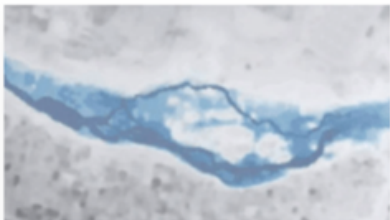
*AI use cases per domain

AI FOR GOOD

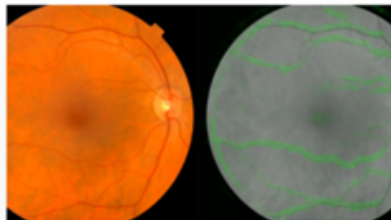
05.07.19 | FUTURE OF PHILANTHROPY

These 20 social enterprises and nonprofits just won Google's AI Impact Challenge

From improving fire department response times to tracking illegal logging, these organizations are using artificial intelligence in innovative ways to drive impact. Now they'll get a technological boost from Google.



Quickly and accurately forecasting floods



Predicting risk for cardiac events



Mapping global fishing activity



Impact Challenge

2,600 applications

119 countries

6 continents

20 organizations selected

\$25 million grant pool

More than 40% were from organizations that hadn't used AI in the past.

AI FOR GOOD

GRANTS FOR AI

- AI for Earth
- AI for Accessibility
- AI for Humanitarian Action
- AI for Cultural Heritage

AI for Good

Providing technology, resources, and expertise to empower those working to solve humanitarian issues and create a more sustainable and accessible world.

▶ [Play AI for Good video](#)



AI FOR GOOD

The Zipline logo features a red stylized 'Z' icon followed by the word 'zipline' in a lowercase, red, sans-serif font.

FORTUNE

HOW DELIVERY DRONES ARE SAVING LIVES IN RWANDA

Back in 2014 Keller Rinaudo met a graduate student at the Ifakara Health Institute in Tanzania. The student had built a mobile alert system for health workers to text emergency requests for medicine and vaccines. Health workers made thousands of emergency requests, which had never before been possible. Unfortunately, there was no way for the government to fulfill these requests.

“I realized then that I was looking at a database of death with thousands of names, addresses, ages, phone numbers,” says Rinaudo.

Having already founded Silicon Valley-based drone startup Zipline, Rinaudo had discovered its mission. “Zipline could build the other half of that system and save the majority of those people’s lives,” he says.

Better known for their use in warfare or for buzzing overhead in urban areas taking photographs, unmanned aerial vehicles, or drones, are often tightly regulated. The small African nation of Rwanda, however, has taken a more positive attitude toward their application.

AI FOR GOOD



MIT Technology Review

[A drone has been used to deliver a donor kidney for the first time](#)



Drones could get donor organs to recipients more quickly than traditional transport methods, increasing the likelihood that the organs will still be “viable” by the time they reach their destination.

The test: On April 19 a drone delivered a donor kidney to surgeons at the [University of Maryland Medical Center](#), ferrying it from a hospital about three miles away. The kidney was then successfully transplanted into a patient with renal failure. It’s the first time a drone has been used to drop off an organ for a transplant.

The recipient: She is a 44-year-old woman from Baltimore who had spent eight years on dialysis before the procedure, the medical center said. She was discharged a few days afterward.

The technology: The drone was a custom-built model with eight rotors to ensure stability. The university created a special apparatus able to measure and maintain temperature, barometric pressure, altitude, vibration, and location, to ensure that the organ was kept in the best possible condition during the flight.

Before the test: The research team started by transporting saline, blood tubes, and other materials, before working their way up to transporting a healthy but nonviable human kidney.

AI FOR GOOD

Air toxicity is affecting 93% of the world's children breathing air that is hazardous to health.

Launched in 2014, IBM's Green Horizons project is using real-time data from optical sensors combined with AI to track various pollutants such as ozone, Sulphur dioxide and particulates, analyzing historical and real-time data from thousands of sources.

The project has helped the Beijing government cut deadly airborne pollution by 20% in less than a year as part of China's clean air action plan.



AI FOR GOOD

Advanced form of automatic speech recognition to **convert raw spoken language into fluent, punctuated text.**

Microsoft is partnering with Rochester Institute of Technology to pilot the use of Microsoft's AI-powered speech and language technology to support students in the classroom who are deaf or hard of hearing.



AI FOR GOOD

AI technology is helping visually impaired and blind people interpret images as well as just text. Screen-reading captioning tools that understand the context of objects in photos and describe photos to visually impaired users.

Since its launch in July 2017, Microsoft SeeingAI has improved independence by assisting users in completing over **7 million tasks independently** and has been **downloaded by 200,000 users**.



AI FOR GOOD



MIT unveils wearable guides for the visually impaired



AI FOR GOOD

- Drones to guide firefighting strategy
- Fire fighting robots
- Detailed scans of interior and exterior from video game
- Repair robots



AI FOR GOOD



FRED HUTCH™



AI FOR GOOD



Futurus Group Files First Ever Patent to Predict Gratitude Using Artificial Intelligence

NEWS PROVIDED BY
Futurus Group →
May 30, 2019, 20:00 ET



IRVINE, Calif., May 30, 2019 /PRNewswire/ -- Futurus Group, an affiliate of Gobel Enterprises and a full-service consulting firm focused on artificial intelligence, today announced that it is seeking a patent for its proprietary gratitude prediction machine learning model.

G2G (Gratitude to Give), Futurus' flagship product, currently utilizes this patent-pending algorithm and is the first artificially intelligent product on the market focused on predicting gratitude specifically in a healthcare environment. Early results have revealed promising insights. One client using G2G prioritized a list of 500 high-gratitude patients and 500 high-wealth patients. Forty-seven percent of the high-gratitude patients became donors, surpassing the ten percent of high-wealth patients who did.

"We conceptualized this idea a few years ago," said Chad Gobel, CEO and founder of Gobel Group. "We felt that the way philanthropic organizations were finding prospects was incomplete, and we wanted to develop an algorithm that could dramatically improve the methodology. We're so excited to see such great preliminary results, and the filing of the patent is an exciting milestone for us."

This patent-pending technology is the first and only artificially intelligent algorithm that accurately predicts gratitude. It involves the use of various machine learning models in order to generate a gratitude score that characterizes the likelihood that patients will make a donation to the healthcare organization in the future.

Using this HIPAA-compliant method, organizations will be able to obtain patient history data, including data collected from patient interactions with the hospital as well as third party data, and then use the gratitude prediction model to process the data in order to generate a "gratitude score" for each individual.

This technology will enable philanthropic organizations to use the gratitude scores generated by the system to optimize resource allocation and reduce the number of resources required to obtain a target objective. The algorithm will prioritize prospects based on their varying levels of gratitude, thereby optimizing the allocation of the organization's limited resources according to the prioritization.

"We are pleased to be able to strengthen our intellectual property protection with the addition of this patent," stated Nathan Chappell, president of Futurus Group. "Our goal with Futurus is to expand and improve the uses of AI-based gratitude indication, both nationally and internationally, and we're very excited to be working towards securing a patent for our proprietary technology. While we have already seen early success with the model in G2G, we intend to take full advantage of the algorithm and utilize it in other products soon to come."

AI FOR GOOD



Finding a needle in a haystack

A screenshot of a professional profile page on a platform labeled "HI.". The page is for Anne McKinsey, MD, who is the Head of the School of Medicine at Harvard University. It displays her contact information, including email and phone numbers, and a KOL Score of 88. A dropdown menu is open, showing various viewing options such as Publications (25), Clinical Trials (5), Sunshine Payments (10), Guidelines (2), Patents (28), and Company Affiliations (23).

HI. Home Search Sarah

< Back to Search Results

Anne McKinsey, MD

Head of the School of Medicine, Harvard University
Department of Cardiology, School of Medicine
New York, New York

88
KOL Score

CONTACT INFO

Email	Phone	Fax
anne.mckinsey@harvard.edu	404-394-3789 404-544-6723	404-544-8832 404-544-4006

Viewing: Publications (25) ▲

- PUBLIC
- Associ with sc Arvaniti
- ESGE 14 when in Metabol
- Public

- Clinical Trials (5) obesity, insulin resistance and the metabolic syndrome
- Sunshine Payments (10) oul A, Ball MA, Barthe M, Besselink M, Deviere J... +6 more
- Guidelines (2) id tomography (CT) as the first-line imaging modality on admission it in the absence of contraindications... SEE MORE
- Patents (28)
- Company Affiliations (23)



AI IN HIGHER EDUCATION

AI FOR GOOD

Artificial Intelligence Market in the US Education Sector, AI will grow by 47.7 percent from 2018 to 2022

1. Domestic and international student recruiting practices will change: college recruiting teams will be able to better focus their efforts by creating algorithms that can predict the applicants most likely to be accepted and enroll

2. Retention efforts will be more proactive than reactive: by identifying early warning signs, red flags, and students who are most likely to struggle a student success personnel academically, will be able to create retention plans that anticipate, rather than react to, students' difficulties.

3. The admissions process will become faster and more personalized: by automating many administrative activities during the admissions process.

AI FOR GOOD

Artificial Intelligence Market in the US Education Sector, AI will grow by 47.7 percent from 2018 to 2022

4. Admissions teams will have assistance addressing “summer melt”: by providing personalized and frequent text messaging and communication, AI can identify accepted applicants who paid a deposit in May but may not enroll in September. This identification allows admissions staff to create intervention strategies to increase their autumn enrollment numbers.

5. The college’s bottom line and reputational value will improve: by identifying and targeting applicants and students who are the best fit for the school and then personalizing all experiences across the student lifecycle, schools will be able to operate more efficiently, enroll students more likely to graduate, and offer higher quality experiences.

AI FOR GOOD

Philanthropic giving to AI initiatives in Universities is growing

Since 2015, nine wealthy donors have given a total of about \$583.5 million to nonprofit institutions that are developing new artificial-intelligence tools and studying the effects of A.I. on human life.

- **Paul Allen** (Microsoft): Allen Institute for Artificial Intelligence, \$125 million
- **Dwight Diercks** (Nvidia): Milwaukee School of Engineering, \$34 million
- **Austin McChord** (cybersecurity) Rochester Institute of Technology, \$20 million
- **Reid Hoffman** (LinkedIn): Ethics and Governance of Artificial Intelligence Fund, \$10 million (Harvard and MIT)
- **Elon Musk** (PayPal/Tesla, etc): Future of Life Institute, \$10 million

THE CHRONICLE OF PHILANTHROPY

NEWS AND ANALYSIS
OCTOBER 15, 2018

Donors Pour \$583 Million Into Artificial-Intelligence Programs and Research

By Maria Di Mento



The robots are taking over, and some of the tech billionaires who drove their rise are stepping up to give big to programs focused on artificial intelligence.

Since 2015, nine wealthy donors have given a total of about \$583.5 million to nonprofit institutions that are developing new artificial-intelligence tools and studying the effects of A.I. on human life, according to a

ISTOCK

Chronicle tally of publicly announced gifts.

Of those nine, five are technology moguls. Among them is the late Microsoft co-founder Paul Allen, who died Monday. He gave \$125 million in February to his Allen Institute for Artificial Intelligence, a Seattle nonprofit he launched in 2013. His last gift during his lifetime went to a new research program that is studying ways to instill common sense in artificial-intelligence programs to improve problem-solving without human input.

Allen's institute operates several programs that center on creating new A.I. systems and tools, and his gift reflects the majority of those donating large sums to A.I.: philanthropists who want to back the creation of new ways of applying artificial intelligence by supporting new research, academic courses, and professorships.

Allen was joined in that effort by others, including Dwight Diercks, an executive at Nvidia, a tech company specializing in A.I. and supercomputing, who gave the Milwaukee School of Engineering \$34 million last year for a center for courses on A.I., robotics, and related technologies; and Austin McChord, a cybersecurity entrepreneur who dedicated \$20 million of a \$50 million donation he gave to his alma mater, Rochester Institute of Technology, to hire more A.I. and cybersecurity faculty.

Growing Unease

But there is another group of rich donors who are using their big gifts to address and explore ethical and other implications of artificial intelligence on our lives. Of the nine philanthropists in the *Chronicle's* tally, four directed millions to these concerns in the past 20 months, suggesting a growing unease among even masters-of-the-universe types about the potential down sides of artificial intelligence.

AI FOR GOOD

Philanthropic giving to AI initiatives in Universities is growing

June 2019: Oxford

- £150 (\$187 US) million gift by Stephen A. Schwarzman (Blackstone)
- Largest ever cash donation to Oxford
- Will be used to investigate the ethics of artificial intelligence.

Oct 2018: MIT

- \$350 million gift by Stephen A. Schwarzman (Blackstone)
- Establishes the MIT Stephen A. Schwarzman College of Computing
- Most significant structural change to MIT since the early 1950
- New initiative will focus on world-changing breakthroughs and their ethical application

CRACKING THE CODE ON GRATITUDE



CRACKING THE CODE ON GRATITUDE

Using AI in the nonprofit sector is a white canvas.

EXAMPLES:

- 1. Find gratitude, predict generosity**
2. Determine best time and type of approach is best
3. Curate personalized engagement
4. Personalize and automate stewardship
5. Personalize solicitations
6. Blockchain and mission delivery – financial stewardship
7. Make giving easier by using chatbots (ie Alexa)

CRACKING THE CODE ON GRATITUDE

It's not about wealth.

It's about resonance.



CRACKING THE CODE ON GRATITUDE

Generosity follows Gratitude.



Gratitude follows Engagement.



Engagement follows Alignment.



Alignment follows Resonance.



CRACKING THE CODE ON GRATITUDE

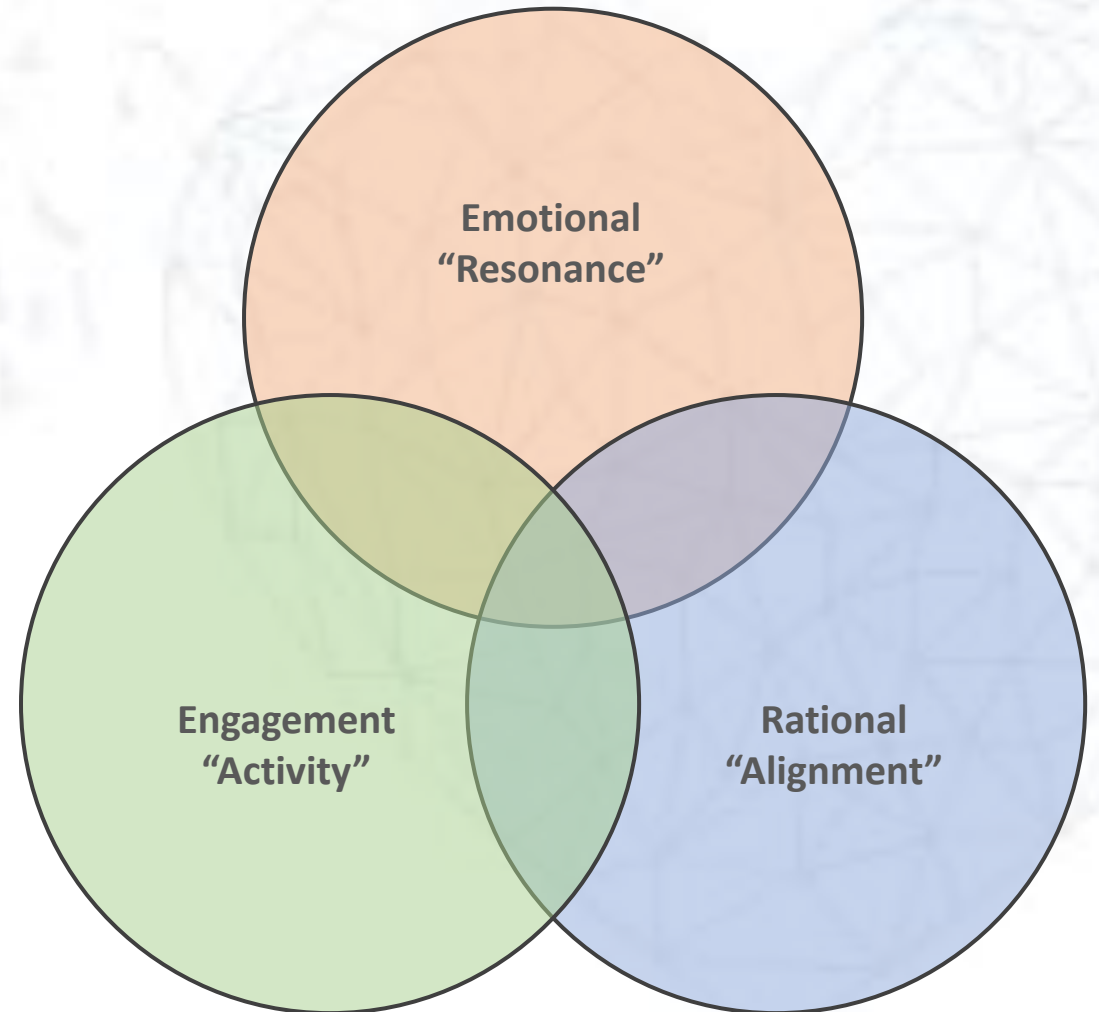
Can AI help identify resonance?



CRACKING THE CODE ON GRATITUDE

We know that gratitude is much more complex because it lives at the center of a persons **(dynamic) emotional, rational** and **financial** perspectives.

With big data and machine-learning, we get much closer to identifying the **intersection of all three factors** of a persons decision to conduct an act of generosity.



CRACKING THE CODE ON GRATITUDE

To develop a machine learning algorithm to predict gratitude you will need data sources that reflect a persons experience.

BASELINE:

- Demographic (internal & external)
 - Age, etc
- CRM/Donation history
- Social media: shares, posts, etc.

EDUCATION SPECIFIC EXAMPLES:

- School records, grades, type of degree
- Years to completion, time to graduate
- Violations, parking tickets, etc
- Class attendance, professors
- Campus housing
- Participation in events, pledge, etc
- Scholarships, Awards, recognition, etc
- Alumni participation, clubs, activities
- Student debt*
- Volunteer records
- Family history, legacy status, degrees

WRAPPING UP



WRAPPING UP

QUESTIONS TO START WITH:

- What do we know about this situation?
- What data do we have right now?
- What interventions would we want to apply in an ideal world?
- Be sure to consider ethics, disclosures and bias.
- Be creative.

WRAPPING UP

WHERE TO START:

- Starting is key
 - AI gets better with time
 - There is opportunity loss in waiting
- Start small – don't try to boil the ocean
- Identify one problem and work to solve it
 - Try to unpack the root cause
 - Evaluate what data might exist between the cause and the solution
- Data collection is key – more data is better in AI

WRAPPING UP

The impact to humanity will be monumental if together we can stop competing for finite dollars but rather strive to inspire a 1% increase in giving.

THANK YOU!



Nathan Chappell
President, Futurus Group
949.558.0660
nathan@futurusgroup.com