



Artificial Intelligence (AI) is often described as machines (or computers) mimicking human intelligence, such as “learning” and “problem solving”. AI is one of the most prominent technologies driving industrial and economic disruptions in the 21st century and has immense potential to drive social impact. Canada, in particular, is home to the third-largest concentration of AI experts in the world.

This year’s LEAP Impact Gathering brought together leaders from across sectors to thoughtfully discuss how AI can be used for social good. Based on the input from the panelists and participants, this summary explores examples of how AI is powering social good today, the opportunity that exists to further tap into the potential of AI, and practical advice to non-technical leaders on how to integrate AI into their initiatives to drive social good.

## CONTEXT:

### AI for social good as it stands today

A research paper, which was released in 2018, revealed that more than 160 potential AI applications for social good exist. It concluded that existing capabilities could “contribute to tackling cases across all 17 of the UN’s sustainable-development goals, potentially helping hundreds of millions of people in both advanced and emerging countries”.<sup>1</sup>

Examples of AI being applied to improve social interventions exist in areas such as:

- **Crisis Response:** Using AI on satellite data to map and predict crises such as wildfires or find missing persons in wilderness areas
- **Security and Justice:** Identifying victims of online sexual harassment and exploitation
- **Economic Empowerment:** Developing alternative credit ratings that enable people who do not have traditional credit scores to access financing opportunities
- **Equity and Inclusion:** Assistance for people with disabilities such as improved speed of communication

Alisa Simon, Senior Vice President and Chief Youth Officer at Kids Help Phone and one of the panelists at this year’s Impact Gathering, discussed a real-life example of partnering with Crisis Text Line, an AI-powered social venture based in the United States, to utilize AI to analyze

<sup>1</sup> Applying artificial intelligence for social good, McKinsey Global Institute

the combination of words used in incoming text messages from kids in crisis. Kids Help Phone can now identify those with the highest likelihood to commit suicide with 93% accuracy, answering the most urgent requests in 40 seconds. This use of AI, combined with the expertise of counsellors, actively rescues 10 people a day from suicide. Kids Help Phone is one of only a few organizations in the world to prioritize incoming help requests by severity.

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**THE OPPORTUNITY:**

## Understanding AI as a powerful tool, taking care to “do no harm”

While many capabilities of AI such as computer vision, natural-language processing, speech and audio processing, content generation, and structured deep learning could be used to benefit society, ethical concerns remain.<sup>1</sup> Nicholas Frosst, a Research Software Engineer at Google Brain and a panelist at the AI for Good forum, said, “AI itself is not inherently good or bad - it is simply a tool. Fear of the use of the tool is very different from the fear of the tool itself”. However, he still agrees that given AI’s powerful capabilities, many of which are still being discovered, we must take care to deploy it with accuracy as well as with the right intentions.

Kathryn Hume, Director of Product and Business Development at Borealis AI and fellow panelist, raises Facebook as an example: “The exact type of technology used for engagement with advertisements, when used for different purposes, can be manipulated with different consequences.”

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Rebecca Finlay, Vice-President, Engagement & Public Policy at CIFAR and fellow panelist, alluded to the potential risk of enhancing existing prejudices and inequities through the way AI is developed: “There are structural issues, for example most computer science developers are male and white.” Two recent books further explore those risks. In her book “Automating Inequality: How High-Tech Tools Profile, Police, and Punish the Poor”, Virginia Eubanks describes how computerized tools applied to social service provision are designed with the institutional biases endemic in our society and can lead to worse outcome for beneficiaries. Caroline Criado-Pérez focuses on the fuel all these modern technologies depend on, data. In her book “Invisible Women: Data Bias in a World Designed for Men”, she exposes the data gender gap which leads to products and services being systematically biased towards men.

In addition to the potential ethical risks of AI, there are also bottlenecks that exist today – especially for data and talent. Today, much of the data that would be useful for applications for social-good are not publically available, and often owned by private- and public-sector organizations. Talent is also in short supply with AI-experts being in high demand. Especially, as technology becomes more important across all sectors, access to skill sets become increasingly challenging for social solutions specifically. Kathryn Hume suggests partnering as a potential solution, “You have to think about: Who can you partner with? Is there a coalition of organizations that can come together to get the right sort of data?”



Nicholas Frosst (Research Engineer, Google Brain), Dr. Kathryn Hume (Director, Product and Business Development, Borealis AI), Alisa Simon (SVP Innovation and Chief Youth Officer, Kids Help Phone), and Rebecca Finlay (VP Engagement and Public Policy, CIFAR) during the AI for Social Good panel at the 2019 Impact Gathering.

**POTENTIAL ACTIONS:**

# Using AI to maximize social impact

Today, while we don't know all of the answers, we do require the mechanisms to ensure technological innovations are being considered and integrated into social solutions. Government, in addition to other key stakeholders in the private sector and technology sector, all have a responsibility to ensure that AI is being used and built ethically and that there is external accountability at multiple levels.

At the organizational level, there are a number of ways to develop processes to build tools that incorporates step by step checks and balances to make ethics a standard development process. Below are some actionable tips from the discussion that took place at the Impact Gathering to support non-technical leaders in maximizing social impact through AI.

**Getting started**

Start with the problem that you are trying to solve.

- AI requires certain prerequisites to deliver value. Ask yourself if you have to make a decision where there are a large number of factors that could affect this decision and if you have a large enough dataset to get started.

- Second, look towards the private sector and potential organizations that may be tackling similar issues. They may already have the funding and resources in place and could potentially be partners to learn from and work with to further develop the technology.

### Implementation

There is uncertainty when working with AI. You may not have the full knowledge required to develop a new feature, and objectives may change throughout the development.

- Execute your project in stages to sense-check if the end result is feasible and iterate on early results. Using an approach, such as an agile methodology, promotes constant communication between team members, allowing insights from experimentation to flow freely. Capture and apply learnings from failures as soon as possible.
- Building diversity in your team is crucial. In every sense, diversity means having teammates of all genders, races, as well as occupations, tackling the problem through the lense of a technical researcher, product owner, user advocate. Diversity creates room for creativity and heightens the usefulness of the final product.

### Sharing successes

Leaders in the social, private, public, and technology sectors need to connect to achieve greater impact together.

- Often times, social ventures are looking for new ways to innovate, while researchers are searching for real-world applications of their newest methodologies. Initiatives such as AI Commons and AI Society are excellent places to share resources and make connections.



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