# WELCOME TO THE AGE OF AI







WHETHER EXCITED BY THE POSSIBILITIES, OR FEARFUL OF WHAT THE DIGITAL FUTURE HOLDS, ONE THING IS CLEAR—AI IS A GAME-CHANGER. HEAR FROM SIX ALUMNI ON HOW AI WILL DISRUPT, TRANSFORM, AND DRIVE INNOVATION.

By Nicole Laidler

Photography by Mark Sommerfeld

# THIS

article wasn't written by artificial intelligence (AI), but in the future it might be.

Since the release of OpenAI's ChatGPT in November last year, it seems like anything is possible. In its first five days, the large language model chatbot attracted a million users intrigued by ChatGPT's ability to "communicate" in human language and to answer prompts with a surprising amount of context, subtlety, and the occasional wit — even if it didn't always get the facts right. In just six months, that number grew to more than 100-million users, making ChatGPT the fastest-growing application ever.

Around the same time, AI programs like Midjourney and DALL-E made it possible for anyone to create detailed and realistic images from text prompts. Who can forget the AI-generated photos of Pope Francis in a white Balenciaga puffer coat, or the arrest of former U.S. President Donald Trump? Both circulated widely online before being called out as fakes.

Whether you feel excited by the possibilities, or fear what the digital future holds, one thing is clear — AI is a game-changer. From the Face ID that unlocks your smartphone to the filters that flag unwanted emails as spam, AI already touches almost every aspect of our personal and professional lives.

*Intouch* spoke with six Ivey alumni about the impacts of this disruptive technology and how it will transform organizational decision-making, increase efficiencies, and drive innovation into the future.

## 100 YEARS IN THE MAKING

The concept of human beings interacting with sentient machines is nothing new. From the machine-man in Fritz Lang's 1927 movie *Metropolis* to the rogue computer HAL in Stanley Kubrick's 1968 science fiction classic *2001: A Space Odyssey*, the opportunities and threats posed by automation have long captured the public's imagination.

Serious research around AI has been ongoing since the 1950s, flourishing as computers became more powerful and less expensive.

"A decade ago, we were using Excel to analyze historical data," says Badri Srinivasan, MSc '17, Head of CLV Products, Machine Learning at Wayfair. As organizations shifted to cloud computing and embraced big data, the power of machine learning and its utility grew exponentially.

Over the past five years, AI has seen significant breakthroughs in deep learning, natural language processing, reinforcement learning, and computer vision tasks, notes Temi Odesanya, MSc '18, Director, Data and Model Governance Automation at Thomson Reuters.

"Natural language processing has made substantial progress in understanding and generating human language, with language models such as OpenAI's ChatGPT showcasing impressive capabilities in tasks like machine translation and text summarization," she says.

Today, generative AI can create content — such as text, images, audio, and video — by learning from existing data and then using that knowledge to generate new and unique outputs. And, you don't need to be able to write code in order to use it. "Anyone who has even a limited understanding of AI can leverage its power," Srinivasan notes.

## JUST HOW SMART IS AI?

If AI seems to be getting smarter, that's because it is being trained on a lot more data than in the past. "Although ChatGPT may have burst into boardroom, schoolyard, and dinner-table conversations seemingly overnight, we need to remember that AI is not a new concept," says Nicole Duncan, MSc '12, Senior Managing Consultant, AI, Edge and IoT at IBM. "Generative AI, like ChatGPT, is the latest evolution, which has since gained mainstream popularity with its ability to conversationally respond to everyday user queries. Its ability to do so is a result of advancements in machine learning and large language models."

Duncan believes that current fears of AI replacing human intelligence are overstated. "Human intelligence empowers artificial intelligence;→

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we need people, and that's not going to change overnight with AI technology," she says.

Andrew Kanapatski, HBA '15, Co-founder and CEO of AI startup Synativ, agrees. "AI is not very smart. While some details are complicated, in essence, it uses math to pull out answers that it thinks are most statistically relevant," he says. "AI cannot replace coherent thought. That's a human job. It can't replace human relationships. You know when you are talking to a chatbot."

Even with the vast amount of data now available for AI models, it's not nearly enough. Synativ is working to close the gap, using generative AI to help computer vision engineers generate missing image data sets.

"You need images to show examples to AI," Kanapatski explains. "You can find a lot of cats, dogs, and babies on Google, but as soon as you are looking for something very specific, it's difficult. We build tools to help people generate the data they need, instead of having to run around with a camera snapping pictures."

## THE BRAVE NEW WORLD OF WORK

AI may be in its infancy, but its impact is already being felt across almost every industry and will only continue to grow.

PwC's *2020 Global Artificial Intelligence Study: Sizing the Prize* estimates that in 2030 AI could contribute up to $15.7 trillion to the global economy, with $6.6 trillion coming from increased productivity and $9.1 trillion from consumption side effects.

The report identifies health care, financial services, and retail as industries already being transformed by AI.

Michael Page, EMBA '20, is the Director, AI Commercialization at Unity Health Toronto, which includes St. Michael's Hospital, St. Joseph's Health Centre, and Providence Healthcare. It is one of only a handful of Canadian hospitals to have an in-house data science department.

Page's team, led by Dr. Muhammad Mamdani, is harnessing AI to drive efficiencies and improve patient care. One AI application is being used to create an optimized schedule for nurses in the emergency department at St. Michael's. It has reduced the daily time spent on scheduling from four hours to around 15 minutes while lowering the error rate, when scheduling rules aren't followed, from more than 20 per cent to under five per cent.

Another application, CHARTWatch, is being used by St. Michael's internal medicine unit to help improve patient outcomes.

CHARTWatch continuously monitors hundreds of variables about a patient and predicts the risk of transfer to the intensive care unit or death within the next 48 hours. "The prediction is made every hour," Page explains. "The clinical team then uses their years of training and expertise to determine how best to help that person."

Initial data shows that CHARTWatch predicts patient outcomes 15 per cent better than clinicians and has resulted in a 15 per cent reduction in death among high-risk patients.

"AI is not going to replace judgment, ethics, or our human need to connect with other people," says Page. "But it is very good at simple linear tasks."

Mukul Ahuja, MBA '09, is the National AI Strategy Leader at Omnia AI, Deloitte Canada's artificial intelligence practice.

Ahuja and his team help financial institutions, technology companies, as well as government and public sector organizations, understand and apply AI's capabilities from both a business and technology standpoint.

"Over the past five years, organizations have really had to think about the types of hard and soft skills they need to harness AI's potential," Ahuja says. "They've had to modernize their data and technology foundations, think about their business priorities, and link it all from business outcomes to operational governance through to technology choices, and drive that alignment."

Generative AI has opened a whole new conversation. "There is a sense of urgency to take advantage of the moment," he says.

While some jobs will undoubtedly disappear as a result of AI, Ahuja believes the overall impact will be positive. "Leveraging AI tools will create and reshape opportunities in the workforce. New job categories and new industries will spring up," he says. "That's what history has taught us."

At Wayfair, AI already plays a key role in keeping the e-commerce retailer on top of its game. "We are a data-first company," says Srinivasan. "We have to make a lot of decisions in real time, practically every single day." →

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On the supply side, AI is used to quickly and accurately tag thousands of products, optimize pricing and markdowns, and streamline all things fulfillment. On the customer side, AI helps Wayfair better understand consumer preferences and provide tailored experiences.

"Retail has done a pretty good job of using AI to optimize supply chains," says Srinivasan. "Now it's about scaling personalization. We want to be able to give the right products to the right customers at the right time, all the time."

Duncan says organizations across all industries should already be looking at how they use data and can leverage AI, to avoid being left behind.

This past May, IBM Consulting unveiled its Centre of Excellence for Generative AI, with the goals of advancing AI capabilities and capitalizing on the transformative potential of generative AI for business outcomes. "We are at a pivotal moment," says Duncan. "There is an impetus to embrace change."

Thompson Reuters is also working closely with clients looking to automate workflows, gain insights, and drive efficiencies with content-driven AI. The global content and technology company intends to invest more than $100 million annually on AI capabilities, and recently launched a new plug-in with Microsoft 365 Copilot, Microsoft's AI assistant feature.

"We have also developed products that leverage AI to summarize tax and legal documents, media optimization, and internal use cases, such as customer churn and financial forecasting," Odesanya says.

AI is causing significant disruption in the classroom, too. ChatGPT now makes it possible to create written or visual content in a matter of seconds, and many students are only too happy to take advantage of the opportunity to cut corners.

"Schools are going to have to do things differently," says Kanapatski. "In my opinion, if you can do an assignment using ChatGPT, it's a bad assignment. It means the way you teach is easily replaceable. One of the things I loved most about my Ivey experience is that it taught me how to think."

## THE NEED FOR REGULATION

There is no doubt that AI has the potential to change the world, but some worry that it may be used to cause more harm than good.

AI pioneer, Dr. Geoffrey Hinton, caused a stir this past May when he resigned from Google so he could warn of the dangers posed by the technology he helped create. Elon Musk has said that AI will cause a third world war, while OpenAI's CEO Sam Altman — the creator of ChatGPT — believes the technology poses an existential risk to humanity.

"We need some guardrails that are AI specific," says Page. "But what is being lost in the public dialogue is that those creating AI are already applying the existing laws and regulations to their work. In health care, for example, we follow strict regulations related to privacy and how we use data."

"AI is not infallible," notes Odesanya. "We need regulations on responsible AI." Organizations should develop their own AI principles that reflect their mission and values, while avoiding excessive regulations that may hinder progress, she says. "At Thompson Reuters, we prioritize governance at every level of the organization, with a mature AI governance team monitoring the use of AI and data within the company."

## REALIZING THE POTENTIAL

The debate around regulation is far from over, but AI is already here and it's just getting started.

"We are going to see more and more human and non-human collaboration in the workplace," says Duncan. "From a leadership perspective, that means future leaders will be digital leaders. They will need to be skilled at managing people, technology, and the interaction and collaboration between the two."

Ahuja agrees with Duncan's observation. "Leaders will have to educate and inspire their teams around the emerging capabilities of AI, and what it means for the organization," he says. "They will have to make decisions about where to invest in technology and how to reorient business and operating norms to harness the potential."

Keeping up with the speed of change will require flexibility and a commitment to continuous improvement. "Organizations should ensure existing processes are conducive to rapid decision-making as leaders will need to be increasingly adaptive and agile," Duncan notes. "That said, organizations need to be duly mindful to ensure the ethical use of AI."

While it may take a while for humanity to adjust, Page says AI will soon play a role in almost everything we do. "AI is the new electricity," he says. "It is going to be everywhere." ■

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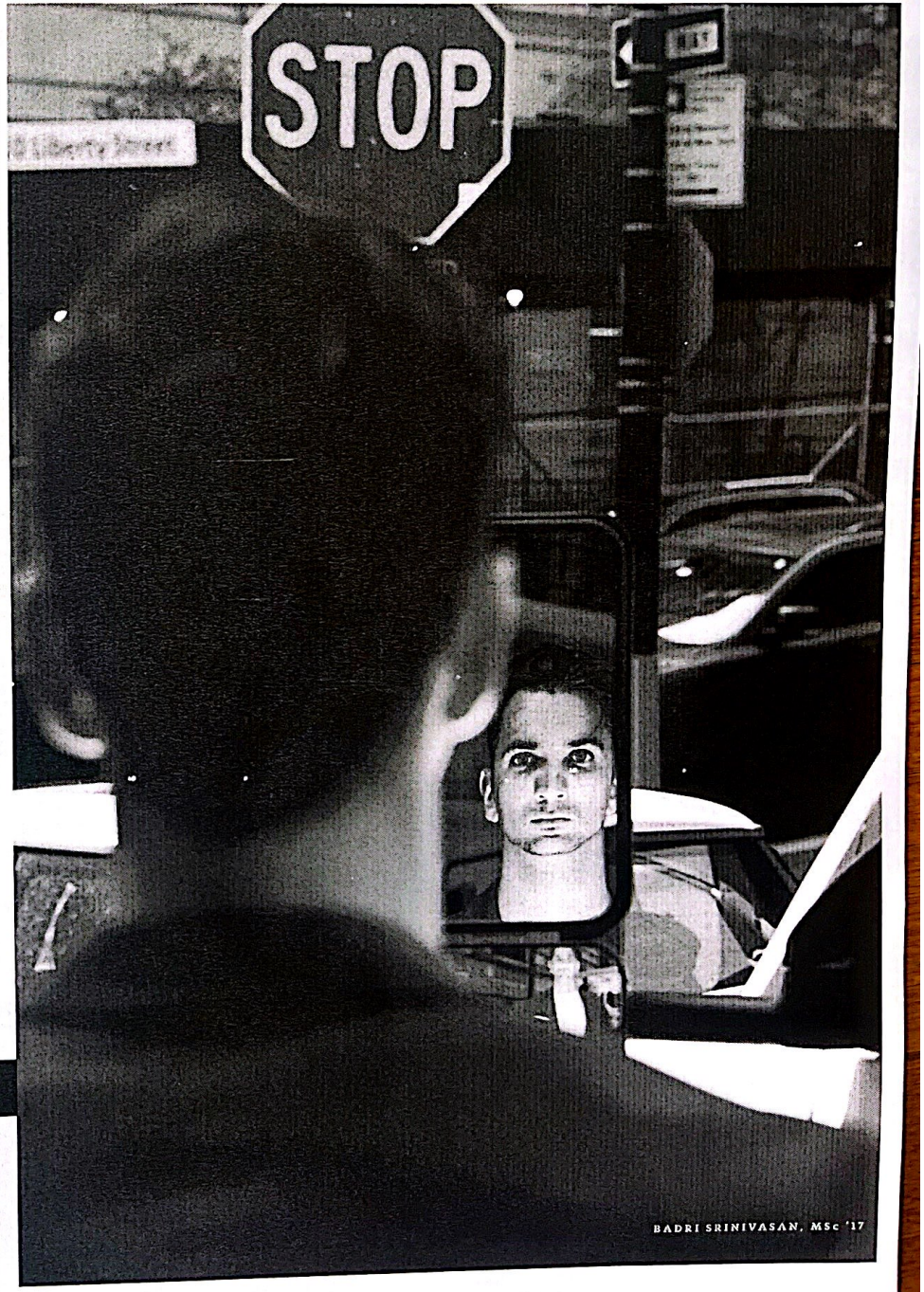


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RETAIL

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