Actua's AI-Ready Program

AI in Context: Responsibility and Ethics in Artificial Intelligence

Introduction

AI does not develop in a vacuum; it is a constantly evolving technology that reflects the values, choices, and priorities of the people who build and use it. As digital citizens who use technology and the internet responsibly, ethically, and safely, this invites us to think not only about risks, but also to recognize our role as decision-makers, designers, and users in shaping how AI shows up in the world. The topics below are not exhaustive, but are intended to encourage critical thinking and curiosity, emphasize human agency and responsibility, and create space for a values-based discussion about AI.

Bias, Fairness, and Representation

> *By noticing and asking whose voices are included, who is missing, and who gets to make decisions, we can help shape AI systems that are more fair and reflective of the communities they impact.*

AI systems learn from data created by people and societies. This means they reflect the patterns, perspectives, and gaps present in the real world. When data used to train AI includes societal biases or comes from limited sources, AI can unintentionally reproduce those biases or work less effectively for certain communities, languages, and cultures.

Bias in AI isn't because the technology is "bad" or "mean", it comes from it learning an incomplete picture of the world. If an AI only learns from one type of story, face, or voice, it will lack the data it needs to work equally well for everyone. Recognizing this gives us an opportunity to shape AI intentionally.

Privacy and Security

> *By thinking about who is collecting data, whether people are informed and able to consent, and how information is protected, we can make more intentional and empowered choices.*

AI systems rely on large amounts of data, often drawn from people's online behaviours and digital lives. This raises important questions about how data is collected, used, stored, and protected. As AI becomes more common, privacy increasingly becomes a shared responsibility, not just for companies and governments, but for users too.

It's important to treat data not as something to extract, but as something to care for. Instead of only asking, "Can this data be collected?", we should ask, "Should it be collected, and under what conditions?". Paying attention to app permissions, questioning why a platform wants certain information, and choosing what to share online are all ways to build digital awareness and control. Privacy is not about avoiding technology, it is about using it on your own terms.

Environmental Impact

> *By reflecting on our own AI use and making intentional choices, we can help reduce environmental impact and contribute to a more sustainable future.*

Training and running large AI models requires immense computing power, which uses significant amounts of electricity and water for cooling. This can contribute to greenhouse gas emissions, e-waste, and resource depletion. AI infrastructure also relies on large data centres that take up physical land and place demands on local resources, which can affect nearby communities, ecosystems, and water systems.

Every time we use AI tools, there's an environmental cost, even for everyday tasks. Using AI responsibly including knowing when to use it. This invites us to consider: "Do I need to use this AI tool right now?", "Am I using AI thoughtfully, or out of

habit?", and "When does AI meaningfully support my goals, and when does it simply add convenience?".

Work and Automation

By asking how AI can support people rather than replace them, what new skills can be developed, and which kinds of work should always involve human judgment, emotional intelligence, and imagination.

AI may change how some tasks are done, especially repetitive or dangerous ones, but it does not decide the future of work; people do. As technology reshapes jobs, new roles and opportunities can emerge alongside automation.

Automation reflects human choices, not just technological capability. Recognizing this creates space to imagine how work can better support human creativity, care, and well-being. Framing the future of work as flexible and shapeable highlights the shared role people and communities play in guiding how AI is used and in deciding what kinds of work matter most.

Creativity and Ownership

By balancing AI's support with our own judgment and artistic voice, we can enhance our creativity, strengthen problem-solving and communication skills, and create work that reflects both our ideas and the possibilities AI brings.

Generative AI can create text, images, music, and other content as well as remix or imitate work made by people. This raises important questions about AI's role in the creative process including how to preserve artists' voices and authenticity as well as how to approach authorship or ownership of AI-generated works.

Rather than replacing human creativity, AI can act as a supportive tool, helping us explore new ideas, experiment with different approaches, and develop our own skills. Using AI responsibly means keeping our creativity at the centre, questioning its suggestions critically, and reflecting on ethical considerations. For example: If you

build on someone else's work, should you give credit? Is it fair to benefit from someone's creativity without asking? Thinking about these questions helps us respect creators, give credit where it's due, and imagine fair ways humans and AI can work together creatively. AI becomes a tool to amplify imagination, not replace it, allowing us to push the boundaries of what we can create while staying true to our own expression.

Misinformation and Disinformation

By knowing when to pause, question, or step back rather than immediately believing or sharing what we find online, we can help protect trust, credibility, and well-being in the online spaces we all share.

Generative AI can create highly realistic, but completely false, text, images, audio, and videos, including deepfakes. This makes it increasingly challenging to tell what is real and what is fabricated. Rather than considering this an unavoidable threat, we have an opportunity to strengthen our media literacy, critical thinking, and ethical judgment. AI doesn't replace human judgment, it amplifies the need for it.

Responsibility

By asking who is accountable, monitoring outcomes, and remembering that AI decisions are never neutral, we recognise ourselves as active participants in shaping technology.

AI systems are created by humans and shaped by the data and goals we provide. They can make mistakes, but these errors don't remove human responsibility, they make it even more important. Some AI systems operate as "black boxes," making it hard to know how decisions are made. Rather than considering this a loss of control, it highlights the need for continuous learning, monitoring, and reflection.

Humans are essential for setting boundaries, asking questions, and deciding how AI is used. This includes not only designers and developers of technology, but also everyday users. Healthy interactions with AI mean being aware of how much we rely

on it, thinking critically about its suggestions, and knowing when to take a step back. Unlike AI, humans understand context, values, and consequences, which makes judgement, critical thinking, and emotional intelligence essential for guiding decisions. Setting clear personal and social boundaries helps ensure that AI supports fairness, responsibility, and human well-being, rather than replacing our judgement or compromising our values.

About Actua

Actua is creating a Canada where every child has the skills and confidence they need to achieve their full potential. As a leading science, technology, engineering and mathematics (STEM) outreach organization, Actua includes over 40 universities and colleges, engaging 500,000 youth in 600 communities each year. For 25 years, Actua has focused on identifying and removing the barriers for entry into STEM and now have national programs dedicated to engaging Indigenous youth, girls and young women, Black youth, those facing economic barriers and youth in Northern and remote communities. For more information, please visit us online at www.actua.ca and on social media: Instagram, LinkedIn, Facebook and YouTube! For more information, please visit us online at www.actua.ca and on social media: Twitter, Facebook, Instagram and YouTube!

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