**U.S. WIN 2023 Professional Development Week**

***Powering the Next Generation Through Innovation and Efficiency***

**September 18-22, 2023**

***AI: What it Can Do, and Why it Needs Safeguards***

What is artificial intelligence, and why do I need to know? Artificial intelligence (AI) is the ability of machines to perform tasks that would normally require human intelligence. These machine capabilities both inspire and unnerve; trucks that drive themselves, computer programs that develop drug therapies, software that writes news articles and composes music. But before you can imagine the possibilities, you need to know the basics

At the most basic level, AI involves the exhibition of intelligence by a machine. Machine learning (ML) refers to the processes by which a computer can train and improve an algorithm or computer model without step-by-step human involvement. An algorithm is a set of instructions that describe the way to solve particular problems. When people speak of regulating AI or ML, at root, they are really suggesting the need to control algorithms and algorithmic processes because they are at the heart of all machine learning. Moreover, because AI and ML are computational sciences, to regulate them means at some level we are regulating computing and mathematical modeling techniques. These realities also complicate AI governance.

The effectiveness of most AI/ML tools depends upon enormous computing power, large data sets, and powerful computational analysis tools that power deep learning models and other AI learning methods. These building blocks of AI, especially big data, raise policy issues in their own right, especially on privacy and data security grounds. Indeed, many of today’s AI governance discussions are simply extensions of policy debates that have been going on for many years in big data circles.

Finally, so-called foundational models (models trained on broad data that can be adapted to a wide range of downstream tasks) are capturing great attention today because they are akin to a digital Swiss Army knife can be widely used to accomplish a number of different tasks. Popular foundational models or generative AI systems like DALL-E, GPT-4, and LaMDA let users create AI-powered art, scripts, and chatbot conversations. Generative systems are algorithms, which can be used to create new content, including audio, code, images, text, simulations, and videos. Large language models (LLMs), like OpenAI’s ChatGPT, are one type of generative system built on top of a foundational model. Foundational models hold the potential to help democratize the use of AI, but in the process give rise to various new risks of misuse: misinformation, deception, copying, etc. — which also makes AI governance more complicated.

Source: [Artificial Intelligence Primer: Definitions, Benefits & Policy Challenges](https://medium.com/@AdamThierer/artificial-intelligence-primer-definitions-benefits-policy-challenges-4c20a1fcf465#:~:text=At%20the%20most%20basic%20level,%2Dby%2Dstep%20human%20involvement.)

This series of TED talks and attached articles will offer a big-picture overview of some of the potential benefits of AI in our industry and challenges they pose to widespread adoption.

**Session Title:** **How AI could empower any business**

**Speaker:** Andrew Ng – TED2022

**Session Description:**

Expensive to build and often needing highly skilled engineers to maintain, artificial intelligence systems generally only pay off for large tech companies with vast amounts of data. But what if your local pizza shop could use AI to predict which flavor would sell best each day of the week? Andrew Ng shares a vision for democratizing access to AI, empowering any business to make decisions that will increase their profit and productivity. Learn how we could build a richer society – all with just a few self-provided data points. [**Video Link**](https://www.ted.com/talks/andrew_ng_how_ai_could_empower_any_business)

**Session Title:** **Why AI is incredibly smart and shockingly stupid**

**Speaker:** Yejin Choi – TED2023

**Session Description:**

Computer scientist Yejin Choi is here to demystify the current state of massive artificial intelligence systems like ChatGPT, highlighting three key problems with cutting-edge large language models (including some funny instances of them failing at basic commonsense reasoning.) She welcomes us into a new era in which AI is becoming almost like a new intellectual species -- and identifies the benefits of building smaller AI systems trained on human norms and values. (Followed by a Q&A with head of TED Chris Anderson). [**Video Link**](https://www.ted.com/talks/yejin_choi_why_ai_is_incredibly_smart_and_shockingly_stupid)

**Session Title:** **Does AI actually understand us?**

**Speaker:** Alona Fyshe – TED@DestinationCanada

**Session Description:**

Is AI as smart as it seems? Exploring the "brain" behind machine learning, neural networker Alona Fyshe delves into the language processing abilities of talkative tech (like the groundbreaking chatbot and internet obsession ChatGPT) and explains how different it is from your own brain -- even though it can sound convincingly human. [**Video Link**](https://www.ted.com/talks/alona_fyshe_does_ai_actually_understand_us)

**Session Title:** **6 big ethical questions about the future of AI**

**Speaker:** Genevieve Bell – TED Salon: Dell Technologies

**Session Description:**

Artificial intelligence is all around us ... and the future will only bring more of it. How can we ensure the AI systems we build are responsible, safe and sustainable? Ethical AI expert Genevieve Bell shares six framing questions to broaden our understanding of future technology -- and create the next generation of critical thinkers and doers. [**Video Link**](https://www.ted.com/talks/genevieve_bell_6_big_ethical_questions_about_the_future_of_ai)

**Session Title:** **The urgent risks of runaway AI, and what to do about them**

**Speaker:** Gary Marcus – TED2023

**Session Description:**

Will truth and reason survive the evolution of artificial intelligence? AI researcher Gary Marcus says no, not if untrustworthy technology continues to be integrated into our lives at such dangerously high speeds. He advocates for an urgent reevaluation of whether we're building reliable systems (or misinformation machines), explores the failures of today's AI and calls for a global, nonprofit organization to regulate the tech for the sake of democracy and our collective future. (Followed by a Q&A with head of TED Chris Anderson). [**Video Link**](https://www.ted.com/talks/gary_marcus_the_urgent_risks_of_runaway_ai_and_what_to_do_about_them)

**AI Articles**

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