

AWS State, Local, and Education Learning Days

Chicago



BREAKOUT

Generative AI/ML and AI governance

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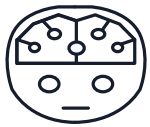
AWS

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AI, ML, deep learning?



Artificial Intelligence (AI)

Any technique that allows computers to mimic human intelligence using logic, if-then statements, and machine learning



Machine learning (ML)

A subset of AI that uses machines to search for patterns in data to build logic models automatically



Deep learning (DL)

A subset of ML composed of deeply multi-layered neural networks that perform tasks like speech and image recognition



Generative AI

Powered by large models that are pretrained on vast corpuses of data and commonly referred to as foundation models (FMs)

What is generative AI?

AI that can produce original content close enough to human generated content for real-world tasks



Powered by foundation models pre-trained on large sets of data with several hundred billion parameters



Tasks can be customized for specific domains with minimal fine-tuning



Applicable to many use cases like text summarization, question answering, digital art creation, code generation, etc.



Reduces time and cost to develop ML models and innovate faster

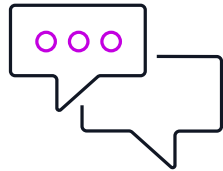


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Foundation model use cases



Productivity
Text generation



Chat
Virtual assistant



Summarization
Text extraction



Search



Code generation



Image generation



Image classification



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What could go wrong?



Hallucinations

Answers that are factually incorrect, irrelevant, or nonsensical because of limitations in their training data and architecture

"The world record for crossing the English Channel on foot is 15 hours"



Bias

Answers that display discriminatory behavior resulting in prejudiced or unequal treatment of a particular group or groups

"Generate a picture of a person cleaning" returns overwhelmingly women



Copyright and IP

The rights of content creators from whom training data is collected remains uncertain and is currently being challenged

Model creators getting sued for alleged improper use of photos

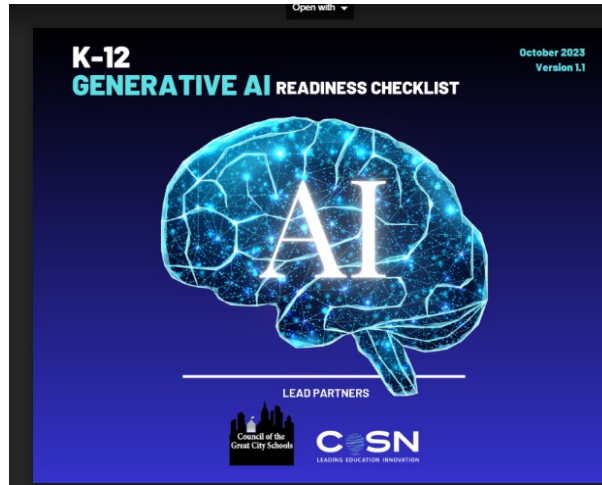


Security and privacy

Some model providers use and store data for training purposes; entire end-to-end data pipelines require security and data privacy controls

Engineers accidentally releasing source code by putting it into ChatGPT for debugging

Emerging regulatory environment



EdW

ARTIFICIAL INTELLIGENCE

Pennsylvania, Virginia Governors Issue AI Executive Orders

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ADMINISTRATION

Biden issues sweeping executive order on AI

CLASSROOM TECHNOLOGY

The 93 Questions Schools Should Ask About AI



By [Alyson Klein](#) — October 17, 2023 ⌚ 2 min read



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The importance of using AI responsibly

Consider how critical it is to use AI responsibly for reducing risks and deliver value comprehensively, at scale, while keeping the AI logic equitable and unbiased



Risks impacting organizations

Reputational impact

Poor organization perception; erodes customer base and hinders sales

Revenue loss

Diminished credibility and trust

Regulatory repercussions

Legal penalty or restrictions resulting from failure to adhere to laws or infringing on rights

"[Organizations] fail to focus on ethical, social, and regulatory implications, leaving themselves vulnerable to potential missteps when it comes to data acquisition and use, algorithmic bias, and other risks, and exposing themselves to social and legal consequences."

HBR's Year in Business and Technology: 2021
referencing McKinsey & Company article "Ten Red Flags Signaling Your Analytics Program Will Fail"



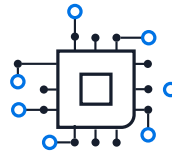
A multi-disciplinary problem



Economics



Moral
philosophy



Technology



Law



Social
science

- Responsible AI is a complex, multi-disciplinary problem, blending requirements across a range of specialist fields
- Although some organizations have begun to establish a basic awareness of the problems associated with responsible AI, few have access to the requisite skills or experience to tackle this problem in a comprehensive manner

Pillars of responsible AI

Value alignment
Systems should be designed and used in ways that align with the organization mission, social norms, and legal regulations



Inclusion
Inclusion of diverse and unique skills, experiences, perspectives, and cultural backgrounds



Training and education
Appropriate knowledge sharing and education to understand purpose, use, and impact



Accountability
Structured, maintaining human involvement and responsibility for design, development, decision processes, and outcomes

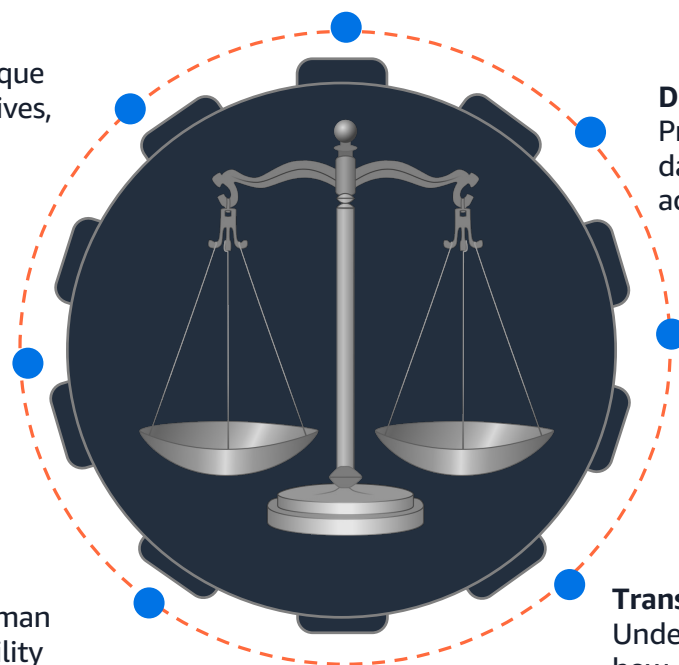
Data privacy and protection
Protects the quality and integrity of data used as well as its relevance, access, and processing



Fairness
Systems must be designed to minimize bias and promote inclusive representation



Transparency and explainability
Understanding how data is used and how decisions and outcomes are made understandable to a human

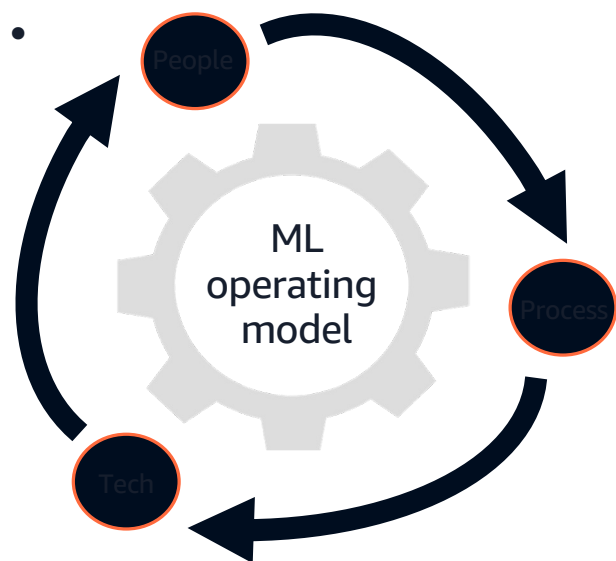


Inclusion matters

- Improves organization performance
- Fuels innovation
- Bridges gaps to address inadvertent access from other cultures
- Avoids more errors



Benefits of building responsibly



Accelerate adoption



Institute appropriate governance structure



Align AI risk management with broader risk efforts



Develop people resources and skills



Build operational capability



Drive inclusive innovation

Value



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**Technological advancement must respect
the rule of law, human rights, and
dignity, as well as our shared values of
inclusivity, privacy, and fairness**





Thank you!

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Accelerate your impact!

Rapid AI prototyping and innovation engagements

Nick Osterbur

Lead, AI Cloud Innovation
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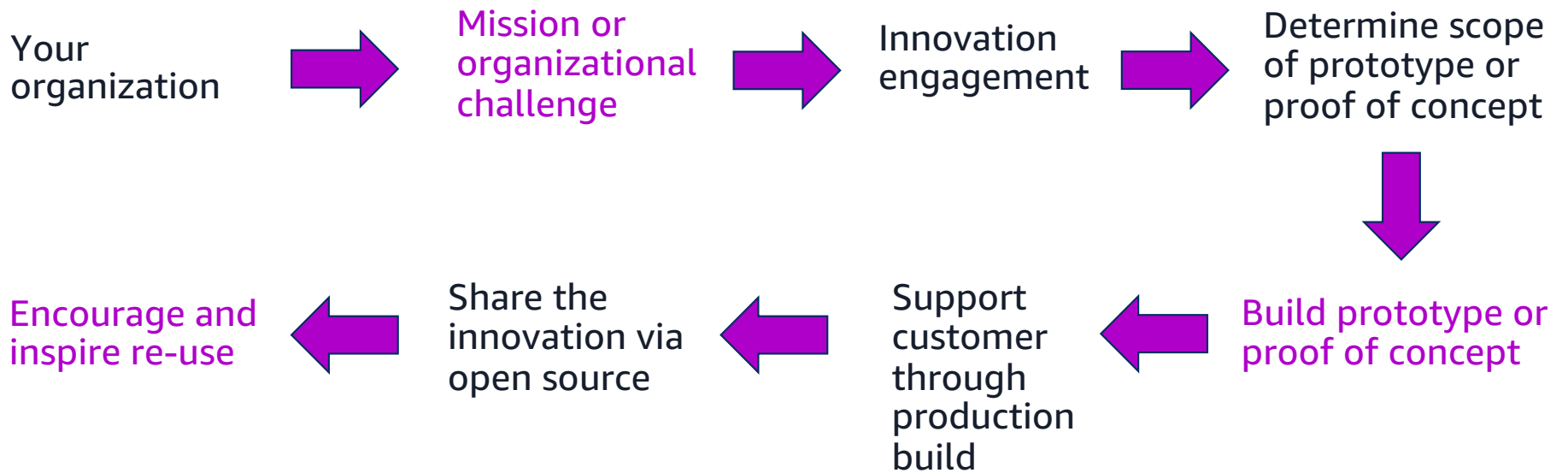
Co-innovation through public-private partnerships

Cloud Innovation Centers enable public sector organizations and AWS to **collaborate and solve real-world public sector challenges**, while providing valuable experience for student interns.

We provide access to **industry-leading innovation processes and cloud technology expertise** to solve organizational and mission-critical problems in the public sector.



Engagement lifecycle



What is your top innovation priority?

...to more easily communicate with residents?

...to index your websites and enable smarter, multi-lingual search?

...to quickly analyze or aggregate thousands of paper records?

...to enable students to access the resources and guidance they need?

Or something else entirely?






Let's innovate and build together.



Facilitating cyber-resiliency: My eCISO

Using the NIST Cyber Security Framework, the City of San Diego and the San Diego Cyber Center of Excellence created a generative AI-based app to support cyber resiliency. It walks users through a natural language interview about their organization's cybersecurity posture and produces a report with NIST-compliant tools and actionable steps for improvement.

My eCISO.

-  Hello, I'm eCISO. I specialize in the NIST Cybersecurity Framework for evaluating an organization's cybersecurity posture. Could you kindly introduce yourself and mention the institution you work for?
-  Colleen with Cave Creek Unified School District
-  Thank you Colleen. Let's start the assessment by discussing your district's cybersecurity practices across the 5 NIST framework functions - Identify, Protect, Detect, Respond, and Recover. I'll ask questions about each function one-by-one. Please provide as much detail as possible in your responses. To begin, for the Identify function, how does your district inventory its assets, manage system configurations, and assess risks?
-  We don't currently have a system in place to do this.
-  Thank you for that information. It seems like the Identify function, which covers asset management, configuration management, and risk assessments, needs significant improvement. Let's move on to discussing the Protect function. Could you describe your district's identity and access management, data security, and system security measures?

Can be applied to additional frameworks including CIS, CJIS, HIPAA, and more

My eCISO.

DISCLAIMER: MyCISO strives to provide accurate information on cyberecurity frameworks however this application provides content that is educational and for informational purposes only. It is recommended that you conduct additional research and verify the accuracy of this infromation via trusted sources and additional review by cybersecurity experts.

☐ I accept the terms and conditions.

eProcurement Officer– Procurement Office

This solution provides a workflow for procurement professionals to describe what they want to buy and the terms to auto-populate scoping documents for RFP using best of class language from university best standards





Thank you!

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**Please complete the survey
for this session**



Executive track

Generative AI/ML and AI governance
for the public sector