

In Today's AI World: Future of Quality: Risk®

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Greg Hutchins PE CERM Bio

- Future of Quality: Risk[®] evangelist since 2000
- Developer of Certified Enterprise Risk Manager[®] certificate
- Author of more than 30 books: Value Added Auditing
- First company to be approved for CIP Forensics, Assurance, Analytics[®] (US Dept of Homeland Security)
- Started ISO auditor training in 1987 through AGA Labs CB
- Founder of:
 - 800Compete.com
 - WorkingIt.com
 - CERMAcademy.com
 - QualityPlusEngineering.com
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Presentation Outline

- Why AI may triple the number of ISO registrations?
- How you can double your salary?



State of AI

CISION
PR Newsroom

Send a Release

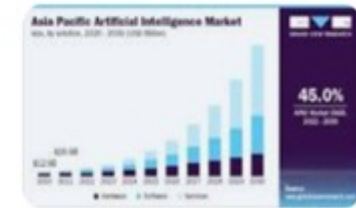
Global Web 3.0 Market Size
Expected to Reach \$81 Billion by
2030 as Branding & Marketing
Needs Increase

NEWS PROVIDED BY
Financialnewsmedia.com →
Oct 06, 2022, 08:30 ET

ABOUT 28,500,000 RESULTS (0.48 seconds)

USD 1,811.8 billion

The global artificial intelligence market is expected to grow at a compound annual growth rate of 38.1% from 2022 to 2030 to reach **USD 1,811.8 billion** by 2030.

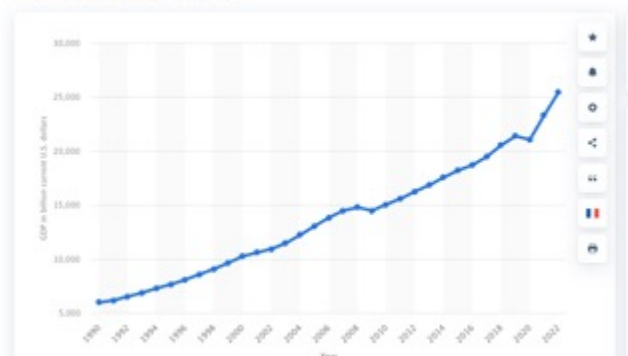


<https://www.grandviewresearch.com/industry-analysis>

Artificial Intelligence Market Size Report, 2022-2030

AI market in 2030 will be .07 to .58 times today's US GDP

Gross domestic product of the United States from 1990 to 2022
(in billion current U.S. dollars)



Statista

Sizing the prize

**PwC's Global Artificial Intelligence Study:
Exploiting the AI Revolution**

What's the real value of AI for your business and how can you capitalise?

\$15.7tr	+26%
Potential contribution to the global economy by 2030 from AI	Up to 26% boost in GDP for local economies from AI by 2030

SORA – Text to Video

- <https://www.wsj.com/tech/ai/openai-develops-tool-to-create-realistic-ai-videos-31f5597f>





Credit: nuttapon punna / iStock

IDEAS MADE TO MATTER | ARTIFICIAL INTELLIGENCE

LinkedIn's chief economist: Gen AI will impact 'solidly middle-class' workers



by [Meredith Somers](#) | Feb 15, 2024

Why It Matters

A LinkedIn analysis predicts that the jobs of 55% of the platform's users will be impacted in some way by the adoption of generative AI.

**WHAT IS THE #1 GLOBAL
CHALLENGE IN AI?**

Trust

Fast Food Decision Making

Wages



Source: [Linkedin comment](#)

Automation



Source: Daily Caller, 2020

LOCAL NEWS >

World's first AI-powered restaurant soon opening doors in Pasadena

KCAL NEWS

By Dean Flores
January 6, 2024 / 10:47 AM PST / KCAL News

Source: KTLA – Jan 2024

Medical Decision Making

Human Physician



Source: [Pexels](#)

AI Physician

HEALTH + BIOLOGY
How AI Is Changing Medical Imaging to Improve Patient Care



Source: Time Magazine 2022

**Human
In
The
Middle**

Military Decision Making

Machine Public Safety

News of Bay Area & State

Report: Oakland police consider use of possibly lethal robots

Joshua Stone, SF GATE
Oct. 17, 2022



Source: SF Gate, 2022

Policing

Human
In
The
Middle



Video shows a drone hovering over a building and then dropping a robot on the roof.

Source: NY Post, Oct.26, 2022

Existential Decision Making

Thing in the Middle - Human or Robot



Source: Pixabay

AI Decision Making – Social Context

- AI problem solving & decision making is every where
- It is often black box decision making & can be unexplainable
- Bias gets baked in algorithmic decision making
- Rules of human & machine engagement are not defined
- Rules of engagement involve trust, fairness, explainability, and assurance



Trust Me!

Autonomous Decision Making Risks

Discriminatory

- Healthcare access
- Tenant screening
- Criminal justice
- Facial recognition
- Employment screening
- Marketing

Discriminatory

- Incarceration
- Homelessness
- Job loss
- Equity-stripping
- Debilitating health

3 Key Questions for AI Trust

Assuring these AI questions is the future of the quality professionals:

1. **What** are the standards to assure AI compliance and adherence?
2. **How** will AI assurance and accountability be audited?
3. **Who** will conduct AI audits and assessments including their qualifications?

AI Bill Of Rights

EO 14110
Trusty AI

OMB 123
- ERM

OMB
AI Gov

NIST
AIRMF

NIST
CSF

WHAT IS THE US DOING IN AI?

USA: AI Bill of Rights Principles



Safe and
Effective
Systems



Algorithmic
Discrimination
Protections



Data Privacy



Notice and
Explanation

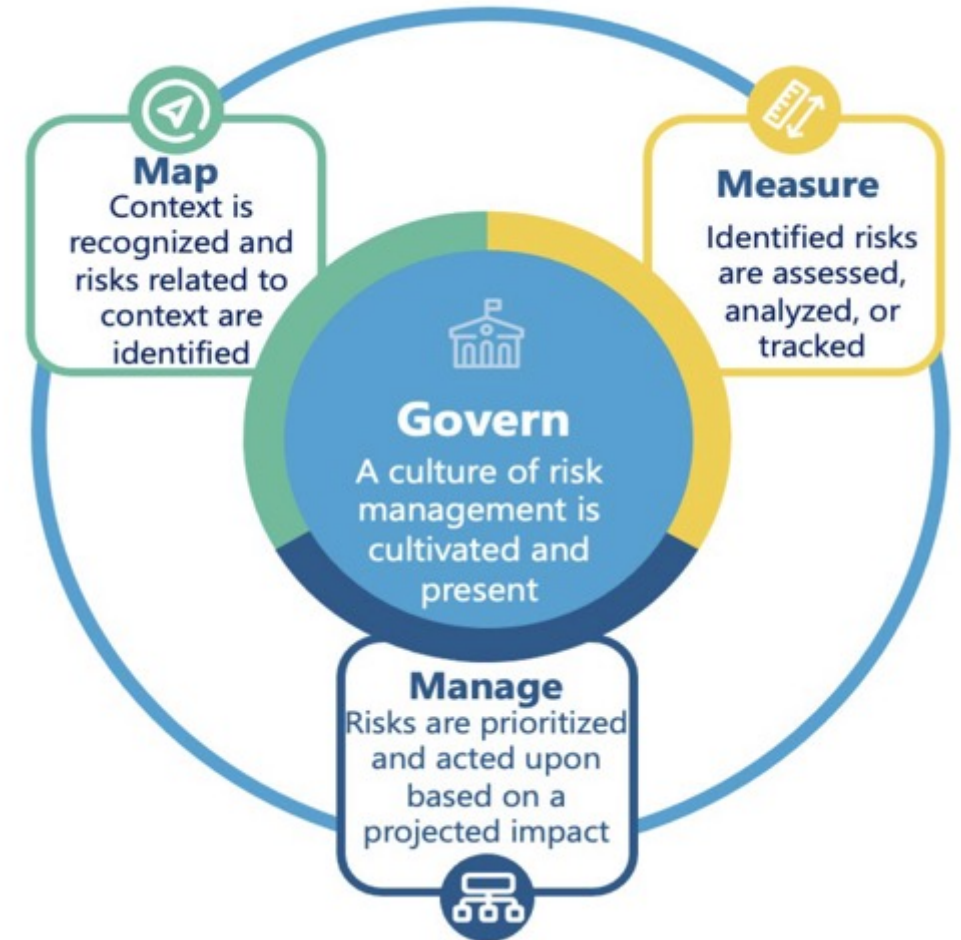


Human
Alternatives,
Consideration,
and Fallback

US: 'What' Standard

NIST AI-RMF 'What' Standard:

1. Framework applies to automated **risk based, decision-making** systems.
2. Is part of US Presidential executive order for US Federal agencies



If the US Feds, Don't Do Anything

Feb 14, 2024 - Technology

Exclusive: States are introducing 50 AI-related bills per week



Ryan Heath, author of [Axios AI+](#)

EU: 'What' Regulation

- EU AI Act risk based system for AI assurance & accountability
- 4 levels of AI risk:
 1. Unacceptable risk. Threats to safety and people
 2. **High risk. Infrastructure; enforcement; employment**
 3. Limited risk. Generative, Chatbots etc
 4. Limited risk. Video games, spam filters



EU 8 Areas Requiring Risk Assessment

1. Biometric identification and categorization of natural persons
- 2. Management and operation of critical infrastructure**
3. Education and vocational training
4. Employment, worker management and access to self-employment
5. Access to and enjoyment of essential private services and public services and benefits
6. Law enforcement
7. Migration, asylum and border control management
8. Assistance in legal interpretation and application of the law

WHY ISO REGISTRATIONS MAY TRIPLE?

- Conformity Assessment is in EU AI Act
 - Process of determining whether a product, service, or system meets the requirements of a particular regulation or standard.
- CE product marking
 - AI Product water marking (labeling)
- Management systems
 - ISO 42001
 - ISO 9001



AI Labeling

AI Nutrition Facts	
Generative Journeys in Twilio Engage	
Description	Accelerate campaign execution by using language prompts to describe a campaign journey. Marketers can apply additional filters but then let CustomerAI create the journey and target the appropriate audience.
Privacy Ladder Level	1
Feature is Optional	Yes
Model Type	Generative
Base Model	OpenAI - GPT-4
Trust Ingredients	
Base Model Trained with Customer Data	No
Customer Data is Shared with Model Vendor	No
Journey prompts are NOT used for training OpenAI models	
Training Data Anonymized	N/A
Data Deletion	Yes
Journey inferences deleted after 30 days	
Human in the Loop	Yes
User sees output immediately in UI User must choose to publish journey	
Data Retention	30 days
Compliance	
Logging & Auditing	Yes
Guardrails	Yes
Input/Output Consistency	Yes
Other Resources	
Learn more at: https://www.twilio.com/en-us/customer-ai	

Learn more about this label at [nutrition-facts.ai](https://www.twilio.com/en-us/customer-ai)

Table 1. Effective labeling strategies

Strategy	Description	Implementation Steps
Explicit Labeling	Implement clear labels for AI-GSC.	Include disclaimers in AI-GSC (text); Integrate labeling in content sharing UI on platforms.
User Education	Inform users about the nature and implications of AI-GSC.	Create educational materials; Provide guidelines for distinguishing between AI-generated and human-created content.
Content Watermarking	Embed digital watermarks in AI-GSC.	Develop watermarking technologies for text; Ensure watermarks are readable and non-intrusive.
Transparency Tools	Provide tools for verifying the authenticity of content.	Develop browser extensions or services to display metadata or watermarks of AI-GSC.

Source: Miami AI club , 2024

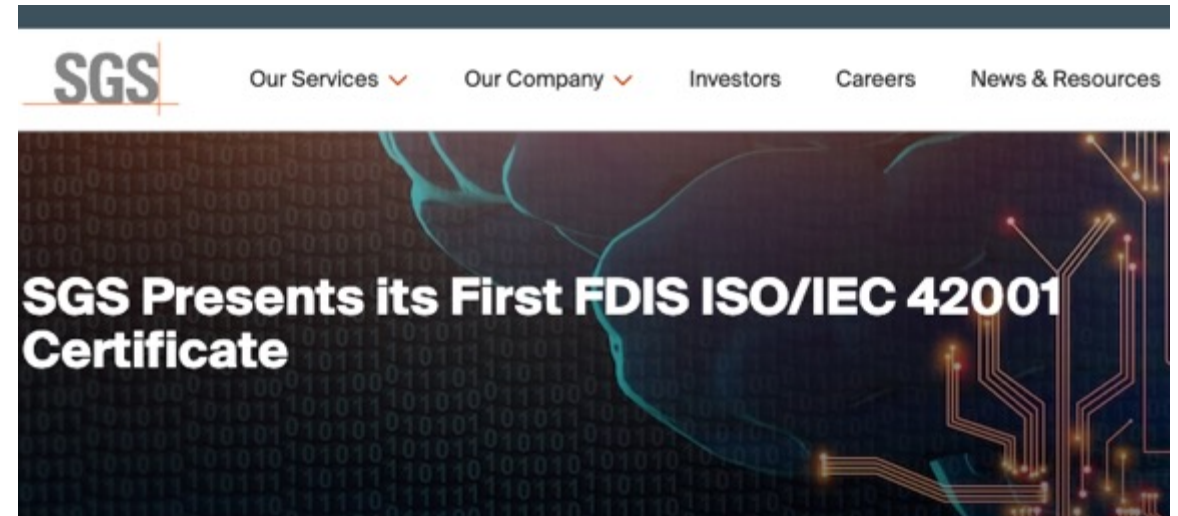
EU AI Act Article 17 (Feb.6, 2024) – Quality Management Systems

“Providers of high-risk AI systems shall put a **quality management system** in place that ensures compliance with this Regulation. That system shall be documented in a systematic and orderly manner in the form of written policies, procedures and instructions, and **shall include**”



EU AI Act Article 9 (Feb.6, 2024) – Risk Management System

1. “A risk management system shall be established, implemented, documented and maintained in relation to high-risk AI systems.
2. The risk management system shall be understood as a **continuous iterative process** planned and run throughout the **entire lifecycle of a high-risk AI system**, requiring regular systematic review and updating.”



How To Double Your Salary?

- Be human in the middle
- Provide 'reasonable' assurance
- Develop and implement AI risk frameworks
 - Tailor ISO 42001 and ISO 31000 to AI contexts
- Develop AI risk control systems
- Learn risk management & risk assurance
- Do risk based, decision making

Better: Add risk to your job title

Best: Add **AI risk & risk assurance** to your job title



Challenges in AI

Quality Attributes (Garvin)

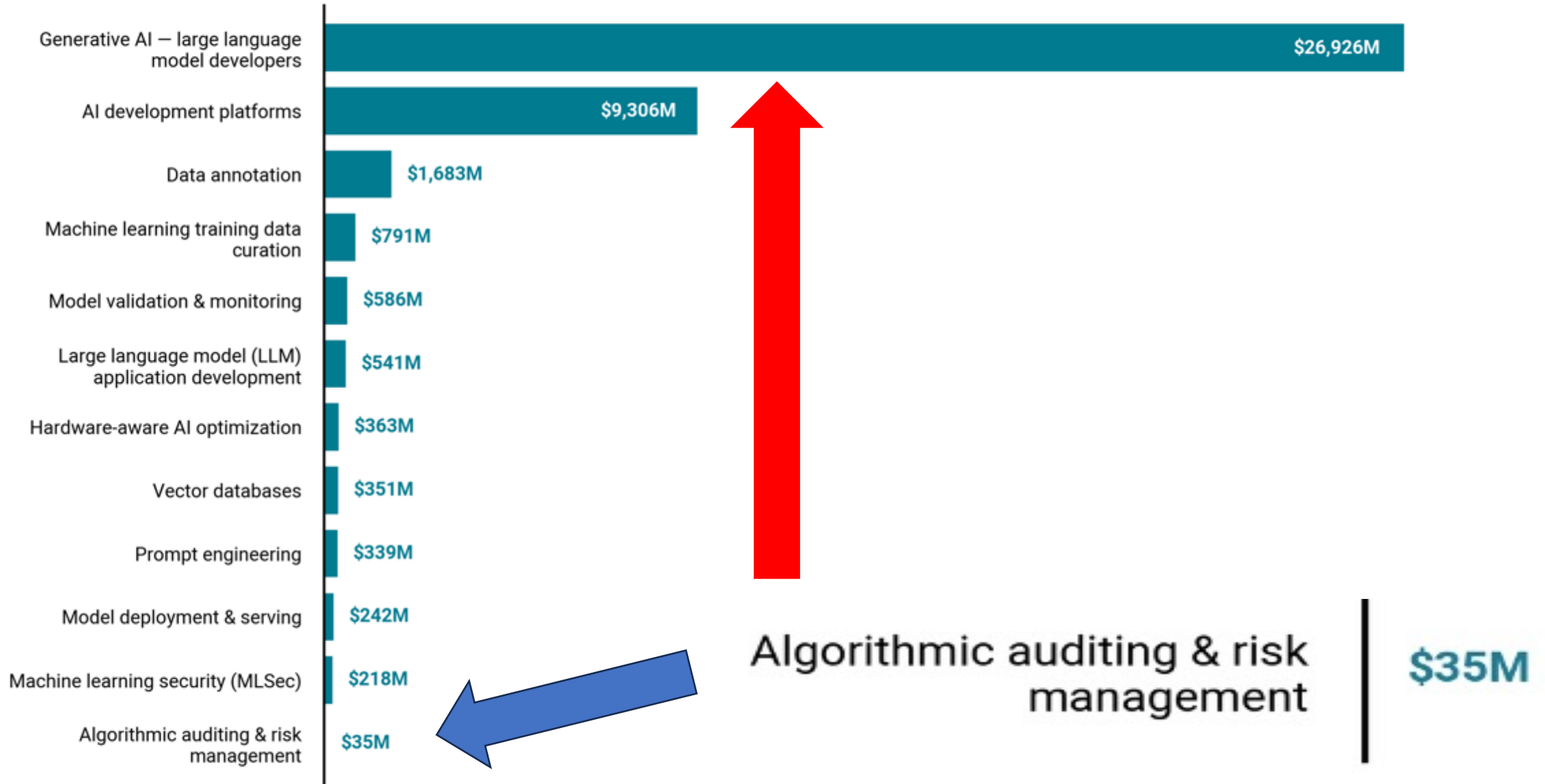
- Performance
- Features
- Reliability
- Conformance
- Durability
- Serviceability
- Aesthetics
- Perceived quality

AI Attributes

- Accurate
- Robust
- Explainable
- Trustworthy
- Fair
- Transparent
- Accountable
- Equitable



Large language model operations (LLMOps) total equity funding



Source: CB Insights

Where Do You Start?

 DeepLearning.AI

AI For Everyone

🗣️ Taught in English | [20 languages available](#) | Some content may not be translated

Enroll for Free
Starts Feb 21

Financial aid available

1,192,360 already enrolled

Course

Gain insight into a topic and learn the fundamentals



Instructor: [Andrew Ng](#)

Top Instructor

4.8 ★

(40,043 reviews)

Beginner level

Recommended experience 

Approx. 6 hours to complete

3 weeks at 2 hours a week

Flexible schedule

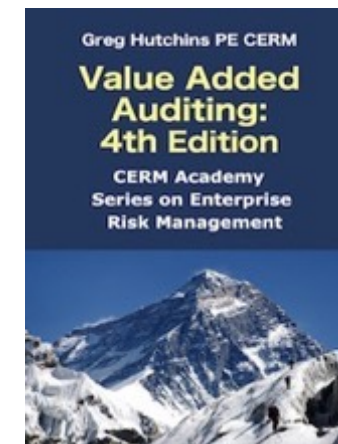
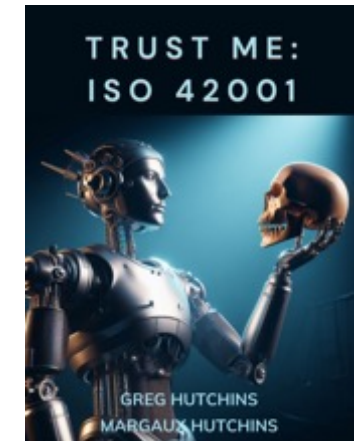
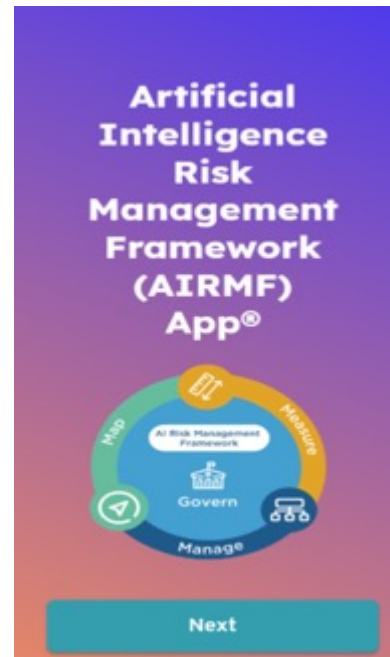
Learn at your own pace

Additional Thoughts

- Get NIST AI RMF (FREE)
- Buy ISO 42001
- Take Ng's more advanced courses
- Read a Risk Based Auditing book
- Get risk certified

Additional Resources

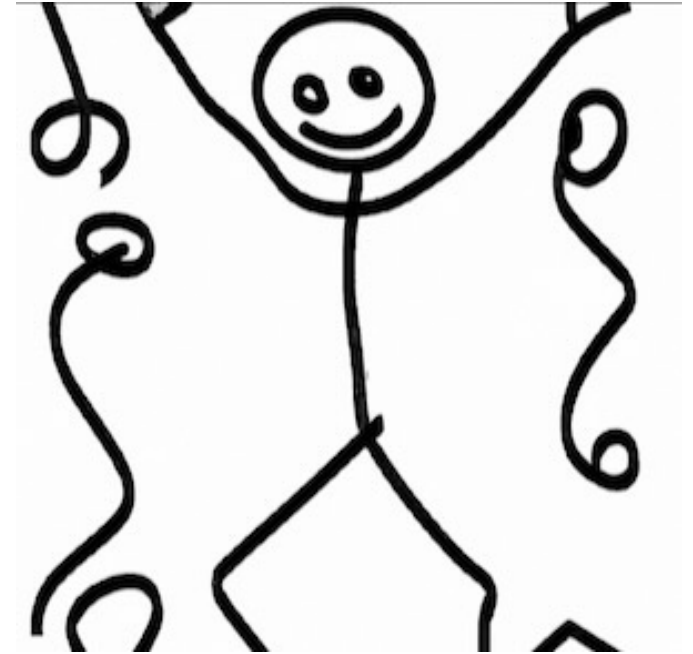
- <https://insights.cermacademy.com/>
 - 3000 articles on ERM and risk (FREE)



Final Thought: George Bernard Shaw

World is populated by three kinds of VUCANs:

1. Those to whom it happens.
2. Those who wonder what happened
3. Those who make things happen.



It is better to be clued in rather than clueless

Are You Going To Be AI Doomer or Boomer?

AI Doomer



AI Boomer



Thank You For Your Time Today

If you have any thoughts or would like to talk, please call me
at: 503.957.6443

Or

Greg@800Compete.com

Story: What AI Is The Future of ISO?

“ISO and IEC’s joint subcommittee on artificial intelligence, meanwhile, has recently developed the first management system standard devoted to AI (ISO/IEC 42001).



Dr. Sung Hwan Cho – ISO President

Sergio Mujico – Secretary General



- ISO January 14, 2024