

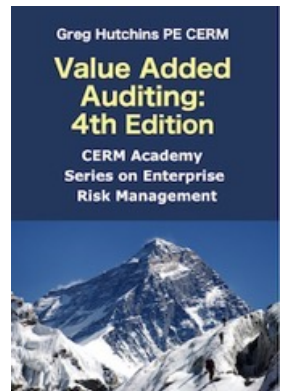
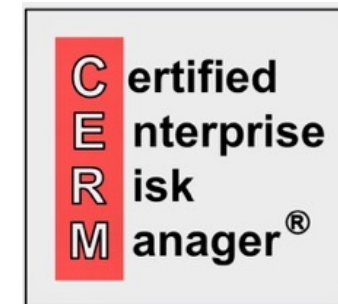
ISO 42001: 10 X BIGGER THAN ISO 9001?

Greg Hutchins PE CERM
QualityPlusEngineering.com
800Compete.com
WorkingIt.com
503.233.1012 or Greg@workingit.com



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



Presentation

1. Trust Me story
2. AI context
3. AI decision making
4. AI rule making
5. AI assurance & accountability
6. ISO 42001 – The 10X question
7. Your future in AI

1. 'Trust Me' Story

1



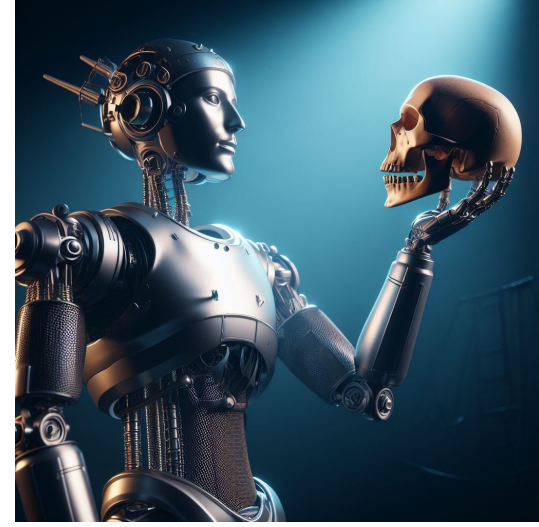
2



3

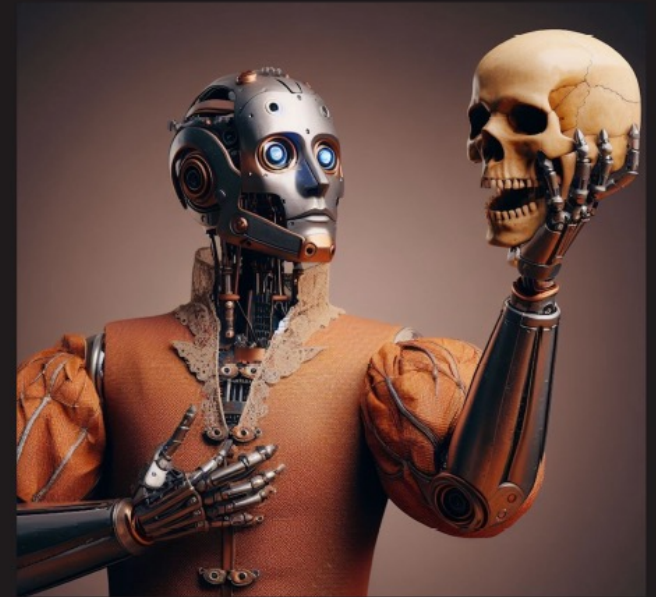


4





TRUST ME: AI RISK MANAGEMENT



GREG HUTCHINS
MARGAUX HUTCHINS

2. AI Context



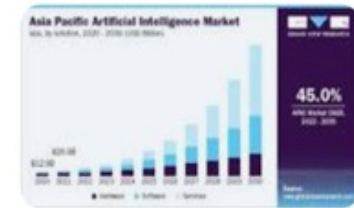
Global Web 3.0 Market Size Expected to Reach \$81 Billion by 2030 as Branding & Marketing Needs Increase

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

ABOUT 10,000,000 results (0.46 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.

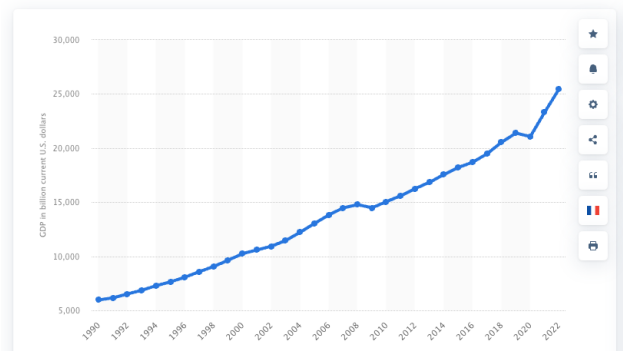


<https://www.grandviewresearch.com/industry-analysis>

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)



World Bank

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

Potential contribution to the global economy by 2030 from AI

+26%

Up to 26% boost in GDP for local economies from AI by 2030

What is AI?

- What is AI?
 - Artificial Intelligence (AI) is the **ability of a machine or system to mimic human intelligence to do tasks** and can repeatedly improve itself based on data it collects.
- Why does AI matter to YOU?
 - Today, the amount of data that is generated, by both humans and machines, far outpaces humans' ability to absorb, interpret, and make complex decisions based on that data. **Artificial intelligence forms the basis for all computer learning and is the future of all complex decision making.**
 - **Source:** NetApp, 2022

What Is AI Risk Assurance?

- “**AI risk assurance** is a process of evaluating and verifying the trustworthiness of AI systems. It aims to provide confidence that AI systems are developed, deployed, and operated in a responsible and ethical manner, minimizing potential harms and maximizing societal benefits.” (Bard AI)
- “**AI risk assurance** refers to the practices and processes put in place to ensure that AI systems operate safely, ethically, and effectively, while minimizing risks associated with their deployment and use. This includes evaluating and managing potential risks related to privacy, security, compliance, ethical concerns, and operational integrity.” (ChatGPT 4)

3. 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

AI Risk < = > Trust < = > Assurance

- **Public policy:** AI is running ahead of policy makers.
- **Workers:** AI is already impacting employment, housing, and other decisions.
- **Professions:** AI is impacting the Future of Work from surveillance, product development, auditing, legal.
- **Companies:** AI is developed in many products. Development will require internal risk protocols.
- **Future issues:** Risk statutes, regulations, definitions, assurance, accountability & implementation are evolving

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

Medical Decision Making

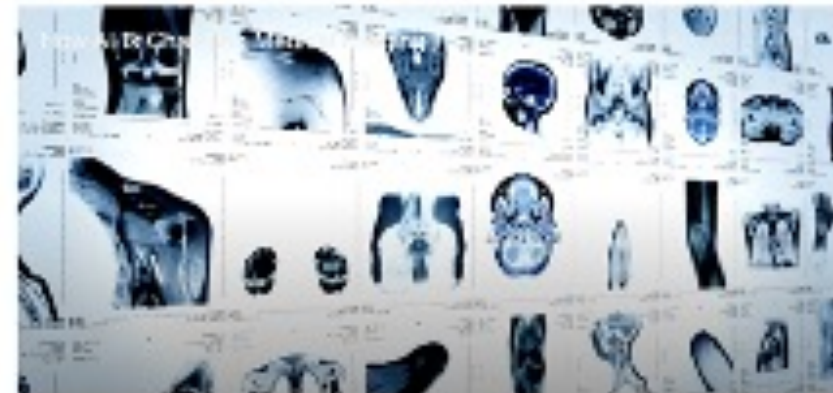
Human Physician



Source: Pexels

AI Physician

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



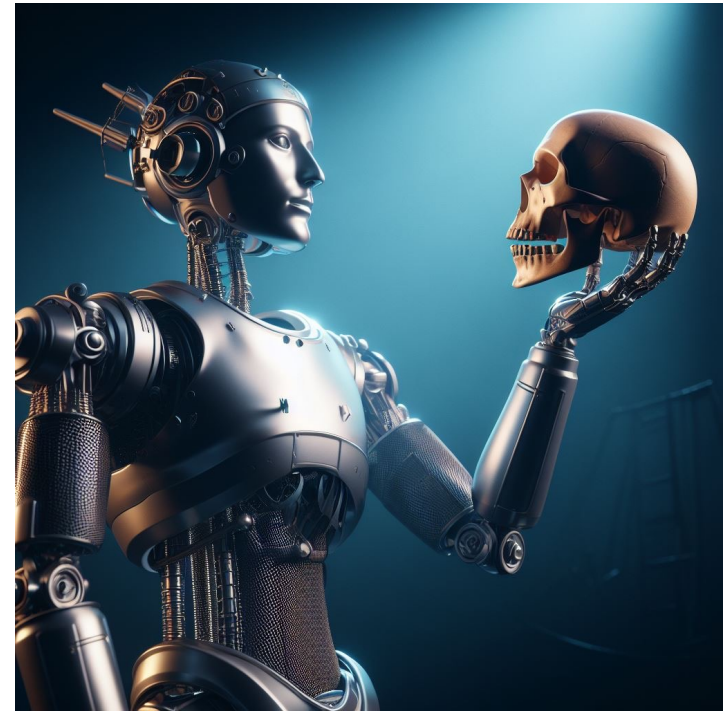
Source: Time Magazine 2022

Military Decision Making

Military



Source: Pixabay



4. AI Rule Making for Autonomous Decision Making

US AI Bill of Rights



```
graph TD; A[US AI Bill of Rights] --> B[AI Statutes/Legislation/EO]; B --> C[AI regs, rules, and guidelines (FTC)]; C --> D[Enterprise Risk Management (OMB)]; D --> E[AI specific domains (safety, power)]
```

AI Statutes/Legislation/EO

AI regs, rules, and guidelines (FTC)

Enterprise Risk Management (OMB)

AI specific domains (safety, power)

US AI Regulation Example (AI Reg)

Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence



BRIEFING ROOM

PRESIDENTIAL ACTIONS



FEDERAL TRADE COMMISSION
PROTECTING AMERICA'S CONSUMERS

[Home](#) / [News and Events](#) / [News](#) / [Press Releases](#)

For Release

FTC Authorizes Compulsory Process for AI-related Products and Services

November 21, 2023

Office of the Governor
State of Oregon



EXECUTIVE ORDER NO. 23-26

ESTABLISHING A STATE GOVERNMENT ARTIFICIAL
INTELLIGENCE ADVISORY COUNCIL

California Privacy Protection Agency

NOTE: The Agency has not yet started the formal rulemaking process for cybersecurity audits, risk assessments, or automated decisionmaking technology. This draft text in this document is intended to facilitate Board discussion and public participation and is subject to change. Text preceded by “FOR BOARD DISCUSSION” presents topics for Board discussion.

DRAFT AUTOMATED DECISIONMAKING TECHNOLOGY REGULATIONS

DECEMBER 2023

5. AI Assurance & Accountability

Assuring these AI questions is the future for CQI and its 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?

US: 'What' Principles

USA: AI Bill of Rights Principles



Safe and
Effective
Systems



Algorithmic
Discrimination
Protections



Data Privacy



Notice and
Explanation

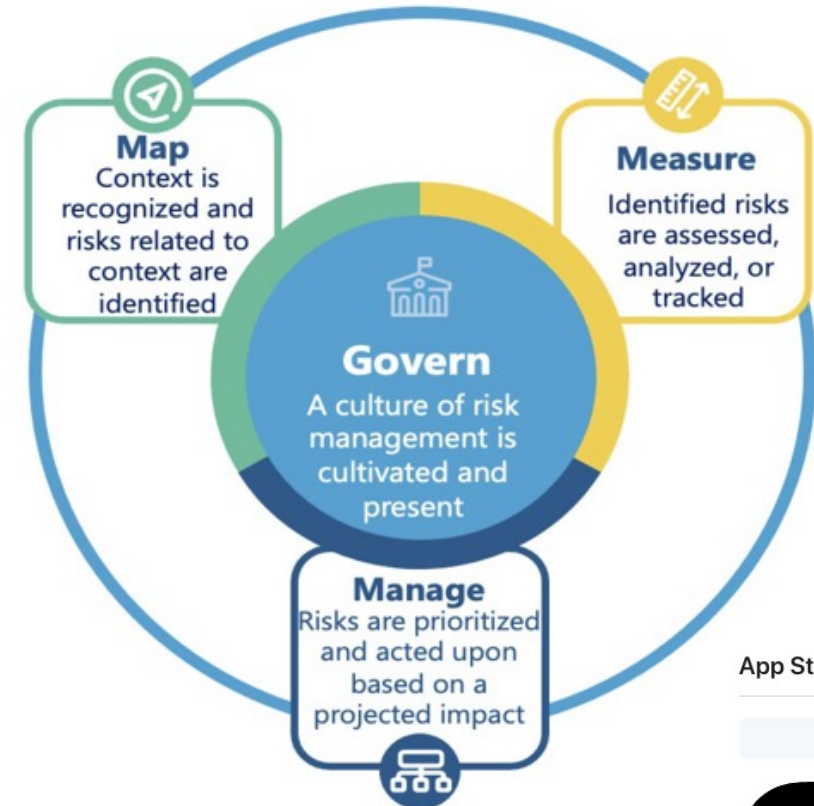


Human
Alternatives,
Consideration,
and Fallback

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



App Store Preview



Source: NIST RMF, 2022

EU: 'What' Regulation

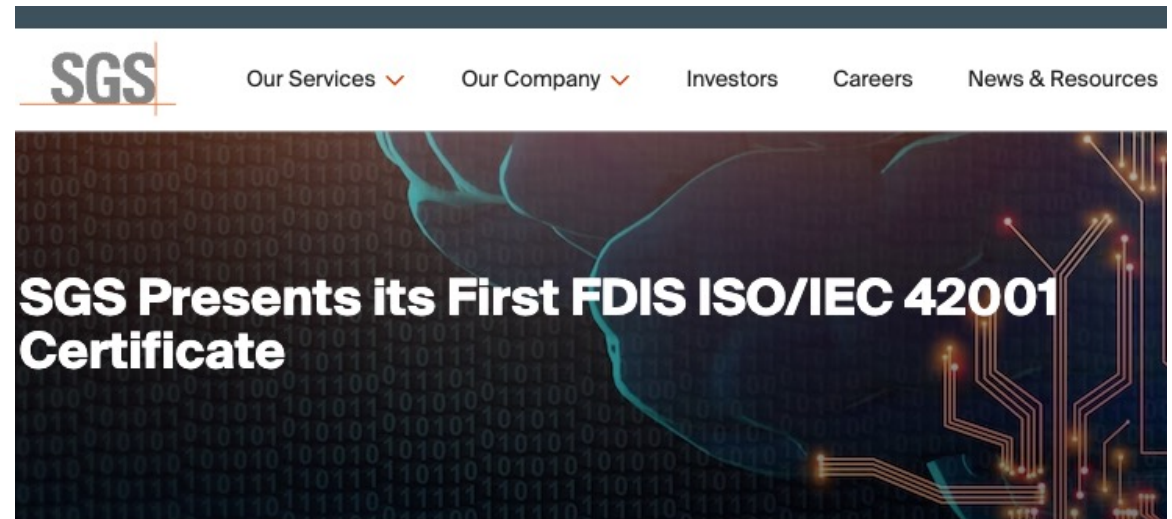
- EU AI Act risk based system for AI assurance & accountability
- 4 levels of AI risk:
 1. Unacceptable risk. Threats to safety and people
 - 2. High risk. Infrastructure; enforcement; employment**
 3. Limited risk. Generative, Chatbots, etc.
 4. Limited risk. Video games, spam filters

EU 8 Areas Requiring Risk Assessment

1. Biometric identification and categorisation 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

Canada: 'What'

- AI Data Act (AIDA)
- ISO 42001 (FDIS)
 - Context
 - Performance evaluation
 - AI risk assessment
 - AI risk treatment



How to Develop Trust: Product Certification

A blue ASME certification form for Tank Fab Inc. The form includes fields for ASME code (1), manufacturer name (2), and various pressure and temperature ratings (3-7). It also features the company's contact information and a large stylized logo.

ASME

{NB} 2

CERTIFIED BY: TANK FAB INC.
8787 HWY. 117 SOUTH ROCKY POINT, NC 28457

PHONE: (910) 675-8999

TANK FAB INC.

M.A.W.P. 6 PSI AT °F

M.A.E.P. 7 PSI AT °F



Year is 1987 – ISO Management Systems



MIL-Q-9858

Revision A, December 16, 1963

[Complete Document](#)

Malcolm Baldrige National Quality Improvement Act of 1987

Motorola's Six Sigma Journey: In pursuit of perfection

ISO
ISO 9001:1987 (MAIN)
Quality systems – Model for quality assurance in

EU: 'How'

- Conformity Assessment
 - Process of determining whether a product, service, or system meets the requirements of a particular regulation or standard.
- CE product marking
 - Product water marking



EU: 'How' Conformity Assessment

- Management system assessment
 - First Party: Self declare compliance
 - Second party assessment
 - Third party certification - **ISO 42001 AI certification**
- EU AI Act
 - ISO 9001 – Quality Management System - Article 17
 - **Pay attention to above: May 10x # of ISO 9001 certifications**



6. 'What' ISO 42001 - 10X Question

- Context of the organization
- Leadership
- Planning
 - AI risk assessment
 - AI risk treatment
 - AI impact assessment
- Support
- Operation
- Performance evaluation
- Improvement

DRAFT INTERNATIONAL STANDARD
ISO/IEC DIS 42001

ISO/IEC JTC 1/SC 42

Secretariat: ANSI

Voting begins on:
2022-11-09

Voting terminates on:
2023-02-01

**Information technology — Artificial intelligence —
Management system**

Key ISO 42001 Definitions

- **Objective:** "Result to be achieved"
- **Risk:** "Effect on uncertainty"
- **Control:** "Measure that maintains and/or modifies risk"
- **Assess/Assure/Audit**

ISO 42001 AI Product Life Cycle

Key aspects of **AI risk assurance** include:

1. Identifying and assessing AI risks
2. Establishing risk management strategies
3. Ensuring compliance with regulations
4. Promoting transparency and accountability
5. Continuous monitoring and improvement

ISO 42001 'Shalls'

“The organization **shall** establish and maintain AI risk criteria that enable:

- Distinguishing acceptable from non acceptable risks
- Performing AI risk assessments
- Conducting AI risk treatment
- Assessing AI risks impacts”

(Source: ISO 42001 DIS 2023)

ISO 42001 Objective – Risk – Control – Assess Implementation

- **Objective:** “To assess system impacts to interested parties of the AI system throughout its life cycle”
- **Risk:** “AI system impact assessment process”
- **Control:** “The organization shall assess the potential consequences for individuals and societies that would result from the development or use of AI systems”
- **Assess/Assure:** Monitor/Improve

(Source: ISO 42001 DIS 2023)

7. Your Future in AI

Artificial Intelligence Auditor

Apply

📍 United Kingdom
Netherlands - Homebased
Ireland - Homebased
Italy - Homebased
Spain - Homebased

[View Fewer Locations](#) ^

France - Homebased
Germany

📅 Full time
🕒 Posted 18 Days Ago
📄 JR0013887

Great that you're thinking about a career with BSI!

At BSI, we're actively involved in shaping thinking and creating solutions for the application and integration of AI as a force for good, accelerating progress to a better society and a sustainable world.

We are thrilled to be sharing this brand new position within our AI business unit as an Artificial Intelligence Auditor (internally known as client managers). This role offers exposure to a wide range of AI and the opportunity to travel ensuring no two days are the same but that you still get that crucial work/ life balance. Take a look at the description below to see if this is a role you would to come and do as a part of our quest to ensuring ethical AI.

Job Title: AI Client Manager
Reports to: AI Operational Delivery Lead
Location: Home based with up to 40% field-based travel to clients
Grade: 12

About Us

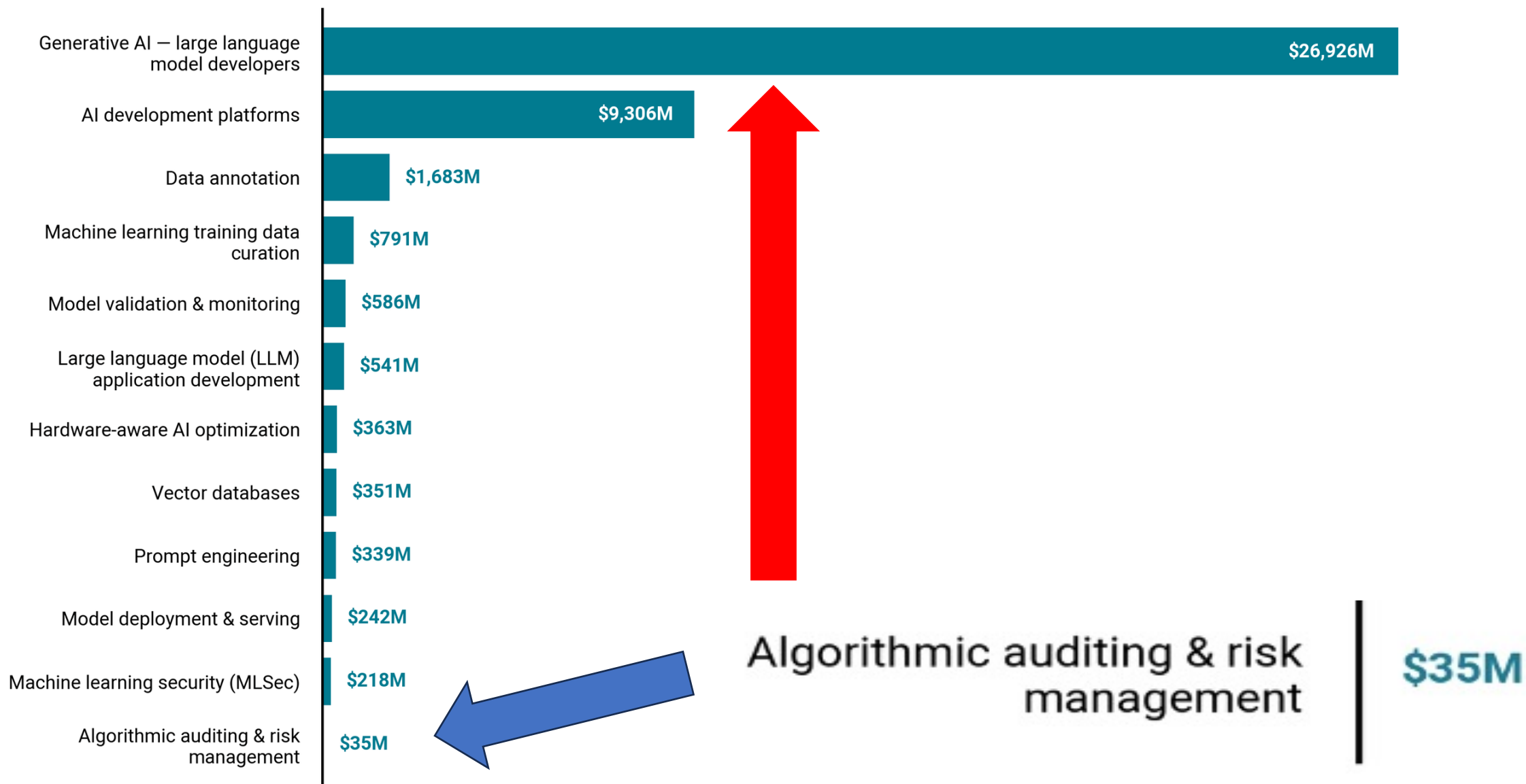


BSI continues to support our people and clients to make a difference during this challenging time. Our focus on innovation in the way we support our clients during the COVID 19 effort, continue to deliver value to our clients and adapt through agile working.

[Read More](#) v

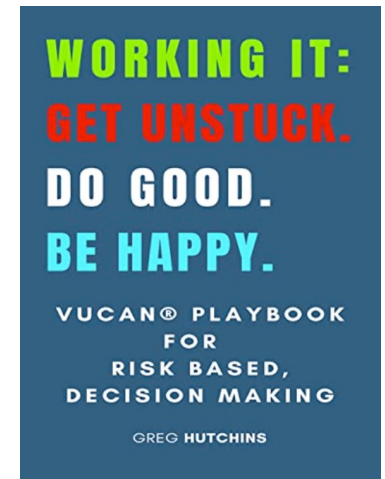


Large language model operations (LLMOps) total equity funding



What You Should Do Now?

- Add risk to your job title
- Understand new AI laws, regs, standards, guidelines.
- Take course 'AI for Everyone'
 - Read 'How to Build Your Career in AI'
- Learn/do risk management
 - Learn/do risk assurance & auditing



A screenshot of the DeepLearning.AI course page for 'AI For Everyone'. The page has a light blue background. At the top, the DeepLearning.AI logo is on the left, and the course title 'AI For Everyone' is in the center. Below the title, it says 'Taught in English | 18 languages available | Some content may not be translated'. There is a blue button that says 'Enroll for Free Starts Dec 5' and a link for 'Financial aid available'. Below the button, the text '1,122,662 already enrolled' is circled in red. At the bottom, there are three sections: '4.8 ★ (39,435 reviews)', 'Beginner level Recommended experience', and 'Approx. 10 hours t 3 weeks at 3 hours a week'.

OpenAI Story Is About ‘Doomers’ and ‘Boomers’

Technology

OpenAI researchers warned board of AI breakthrough ahead of CEO ouster, sources say

By Anna Tong, Jeffrey Dastin and Krystal Hu

November 23, 2023 1:52 AM PST · Updated 3 days ago



Five Days of Chaos: How Sam Altman Returned to OpenAI

What the OpenAI drama means for AI progress – and safety

The Guardian view on OpenAI's board shake-up: changes deliver more for shareholders than for humanity
Editorial

Are You Going to be an AI ‘Doomer’ or ‘Boomer’?

The New York Times

OPINION

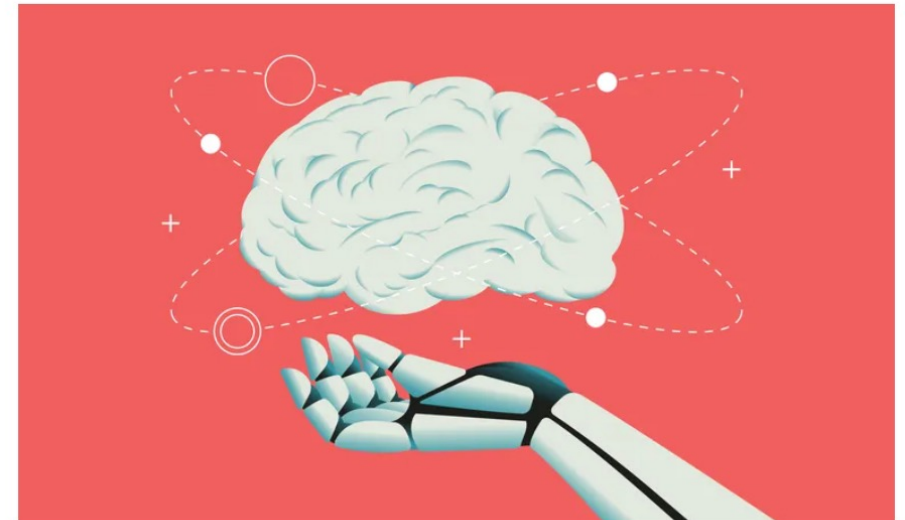
MAUREEN DOWD

Sam Altman, Sugarcoating the Apocalypse

Dec. 2, 2023

AI or happiness: Which will we choose?

Dec. 1, 2023 at 10:01 am | Updated Dec. 1, 2023 at 10:01 am



Getty Images