
Gen AI Applications and Risks

A blue, metallic, futuristic robot leg is shown in a dynamic, forward-leaning pose. The leg is composed of various mechanical segments, including a thigh, knee, and lower leg, all rendered in a glowing blue hue. The background is dark and textured, suggesting a digital or industrial environment. The overall aesthetic is high-tech and futuristic.

Brought to you by SGLN Fellows and Ambassadors

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Understanding these applications will help provide Singaporean leaders with the knowledge and insights needed to excel in global leadership roles within an AI-driven world, and generate opportunities in leveraging emerging technologies to drive productivity improvements globally for our business practices

Introduction to Gen AI

Gen AI Capabilities

Gen AI Use Cases

Key Risks and Considerations

Enterprise Risk Mitigation

Regulatory Requirements

Singapore's Initiatives on AI Governance

Governance Frameworks in Singapore

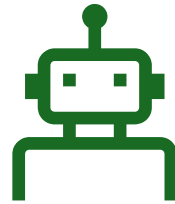
Checklist to Deploy Gen AI

Introduction to Gen AI



Gen AI refers to AI that can find complex relationships in large sets of training data and generalize from what they learn to create new data.

Examples include original illustrations, blog drafts, answers to questions, and more.



Gen AI enables AI models to perform tasks for which they were not expressly trained.

Examples include zero-shot and few-shot learning.

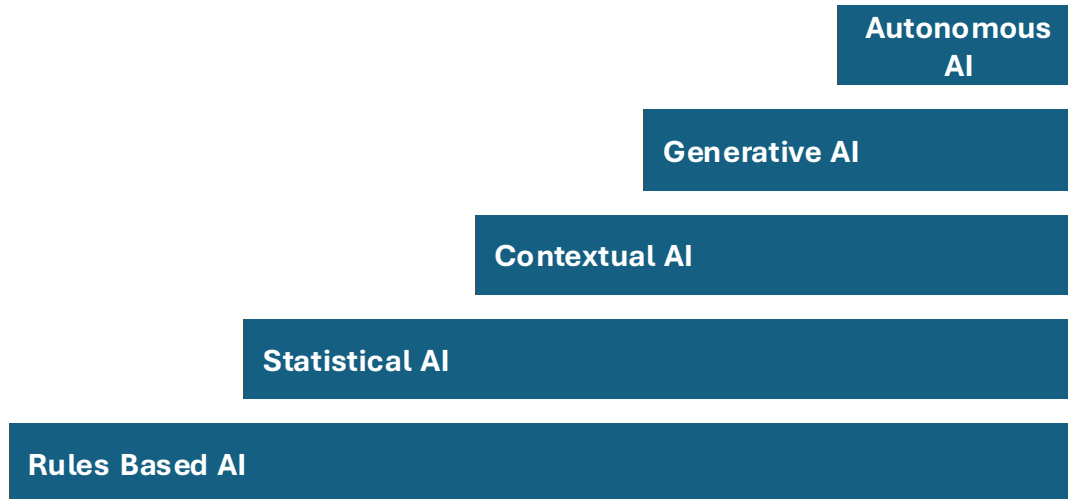


Gen AI is different from older AI models.

Older AI models use statistical, rule-based machine translation techniques.

Gen AI is more like a fluent speaker, able to match entire corpuses of works in different languages and infer the best way to translate a given piece.

Gen AI Capabilities



Gen AI leverages various types of learning data to create new content

- Text
- Code
- Image
- Video

Generative AI capabilities will appear for video, gaming and 3D

- May not be well optimised until 2030 or so

Reference - LEK AI Primer
https://www.lek.com/sites/default/files/PDFs/primer-generative-ai_v2.pdf

1950s-80s	1980s-2010s	2010s-20s	2020s	Future?
Provides Solutions to problems in a specific domain based on a set of pre-defined rules	Based on statistical models Identifies patterns from data and makes predictions	Utilises systems that can reason and respond to specific contexts as humans would (driven by deep & reinforcement learning)	Uses context to create and communicate new content	Employs systems that make decisions and take action without human intervention (e.g. self-driving cars)

Gen AI Use Cases

Industry Agnostic

- Performance Improvements
- Efficiency Gains

Reference: “Are you fluent in prompts and embeddings? Here’s a generative AI primer for busy executives”
<https://cloud.google.com/blog/transform/generative-ai-primer-glossary-for-business-execs>

Organisational Use Cases	
Advertising	Material Development: Companies can leverage gen AI to create customized taglines, visual images, responses to social media engagement, etc.
Sales	Personalised Targeting: Gen AI can be used for personalized email / text generatio. Can even be used to generate an initial version of renewal contract for commercial deal
R&D	Product Development: use existing data sets to create products which match a certain set of qualifications or requirements
Customer Service	Claims Management: Leverage chat bots to automate completion of claims and create automatic triggering of payment
Human Resources	Process Support: create personalized interview questions, write job descriptions, synthesize feedback from performance appraisal cycles
Accounting	Report Generation: leverage Gen AI to generate financial report, process invoices, generate tax returns etc.
Admin	Knowledge Management: Create summaries of meeting notes and transcripts
Public Relations	Content Management: Create content (blog posts, social media etc.) and analyse news sources for mentions of a company
Legal	Litigation support: Ability to ‘read’ an infinite number of documents contemporaneously, uses algorithms to identify patterns and concepts to support litigation strategies

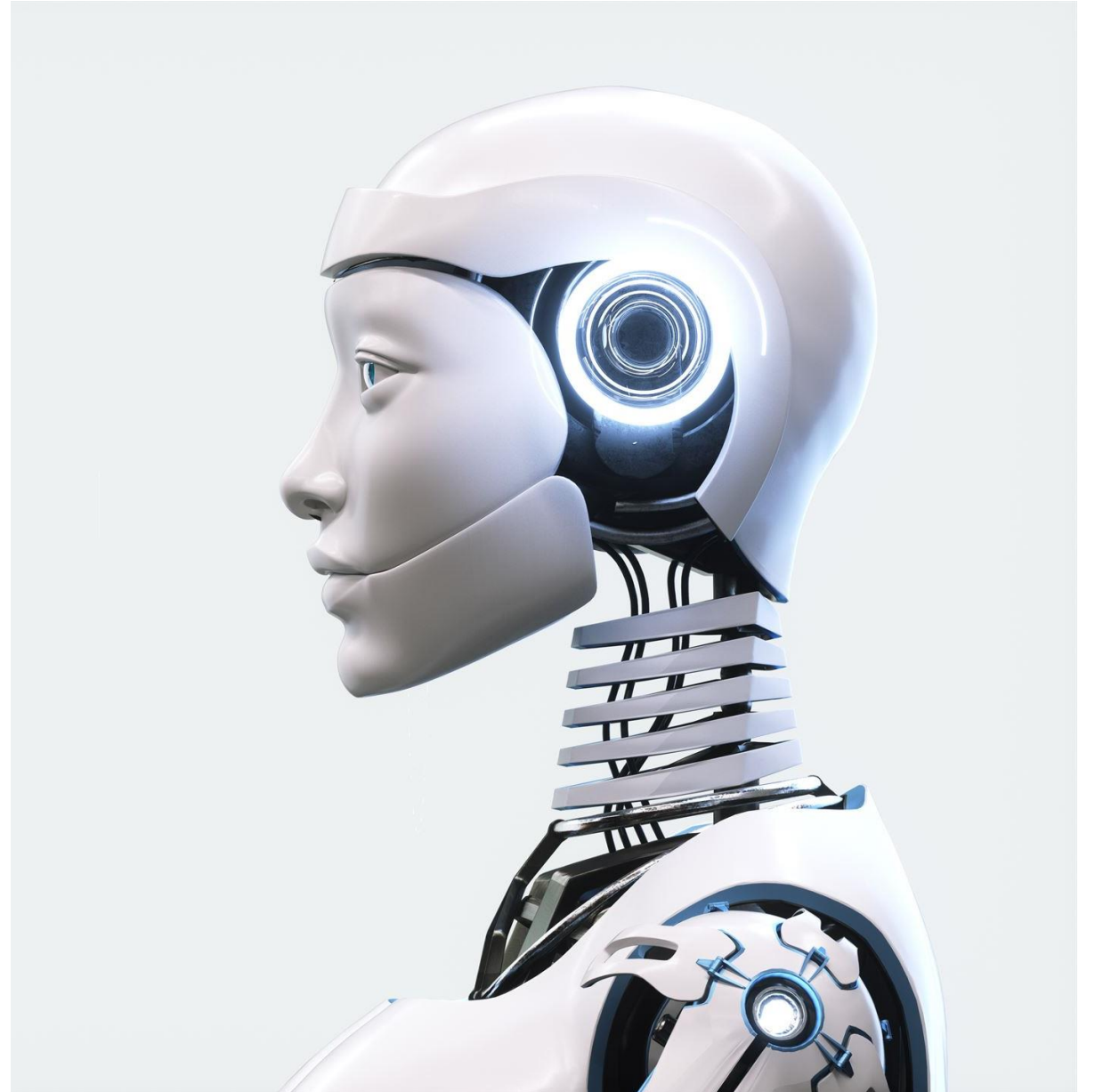
Key Risks and Considerations: Data

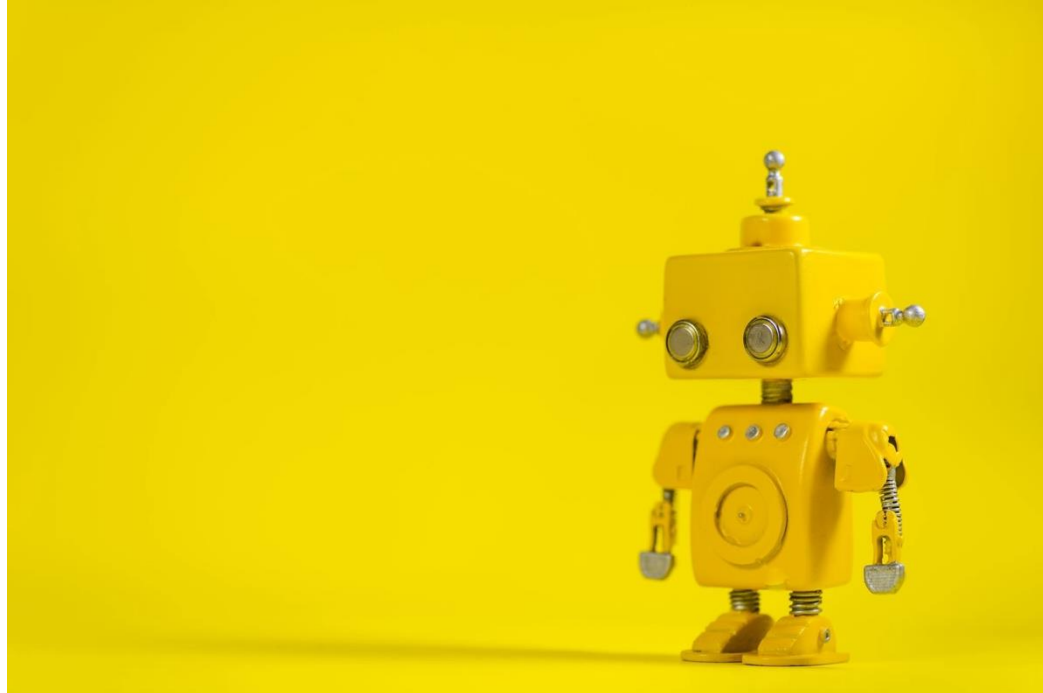


- Error Propagation
- Intellectual Property or Contractual Issues, due to lack of approvals to use data
- Misleading, Inaccurate or Harmful Responses

Key Risks and Considerations: Model and Bias

- Breach of Ethical/Responsible AI Principles
- May lead to discriminatory or unfair output





Key Risks and Considerations: Prompt/Input

- Misleading, Inaccurate or Harmful Responses
- Due to unsophisticated prompts or questions

Key Risks and Considerations: User



Unintended consequences due to users becoming unwitting parties to the creation of misinformation and other harmful content



May pass off AI-generated “hallucinations” – erroneous answers – as fact



Enterprise Risk Management



Policy

Policy that drives reporting of any instances of loss, theft, or unauthorised disclosure of company information



Prohibit

Prohibit information provision that is proprietary or confidential to the employer(including personal data) to AI Tools



Refrain

Refrain from using information generated from AI Tools that is subject to copyright or confidential information of third parties



Adopt

Where possible, adopt enterprise-sanctioned AI Tools. Need to be clear that AI Tools responses may be inaccurate, outdated, or biased. Use at our own discretion and risk

Reference: PWC - Managing Risks of Gen AI.
https://explore.pwc.com/generativeai?_pfses=AkQgojGW DQ6Dm1RP5FtjUm5k



Regulatory Requirements: EU AI Act

The EU AI Act is a comprehensive and influential regulation focused on artificial intelligence.

- Its risk-based regulation, conformity assessment, and enforcement mechanisms make it a significant milestone in AI regulation globally.

It is not the first regulation to address AI.

- Prior to its passing in 2024, various countries and regions had introduced regulations and guidelines to address certain aspects of AI development and deployment.
- GDPR: Provisions relevant to AI systems, particularly regarding data privacy and protection
- Ethical Guidelines for Trustworthy AI by the European Commission: Principles and recommendations for the development and deployment of AI systems

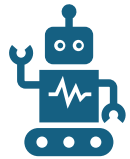
Regulatory Requirements: Other Countries

Several countries have implemented or proposed their own regulations and guidelines related to AI

- UK released its AI Ethics Guidelines
- Canada and Singapore introduced principles and policies to govern AI development and use in 2018



Singapore's Initiatives on AI Governance



National AI Strategy

Released in 2019, updated in 2023
Focus on practical applications of AI in various sectors



AI Verify Foundation and testing tool

Released in June 2023 by IMDA
Open-source AI governance testing framework and toolkit



Proposed Advisory Guidelines on Use of Personal Data in AI

Issued in July 2023 by PDPC
Concerning the use of personal data in ML/AI models and systems



Discussion Paper on Generative AI

Released in June 2023 by IMDA and Aicadium
Outlines plans for reliable and responsible adoption of Generative AI

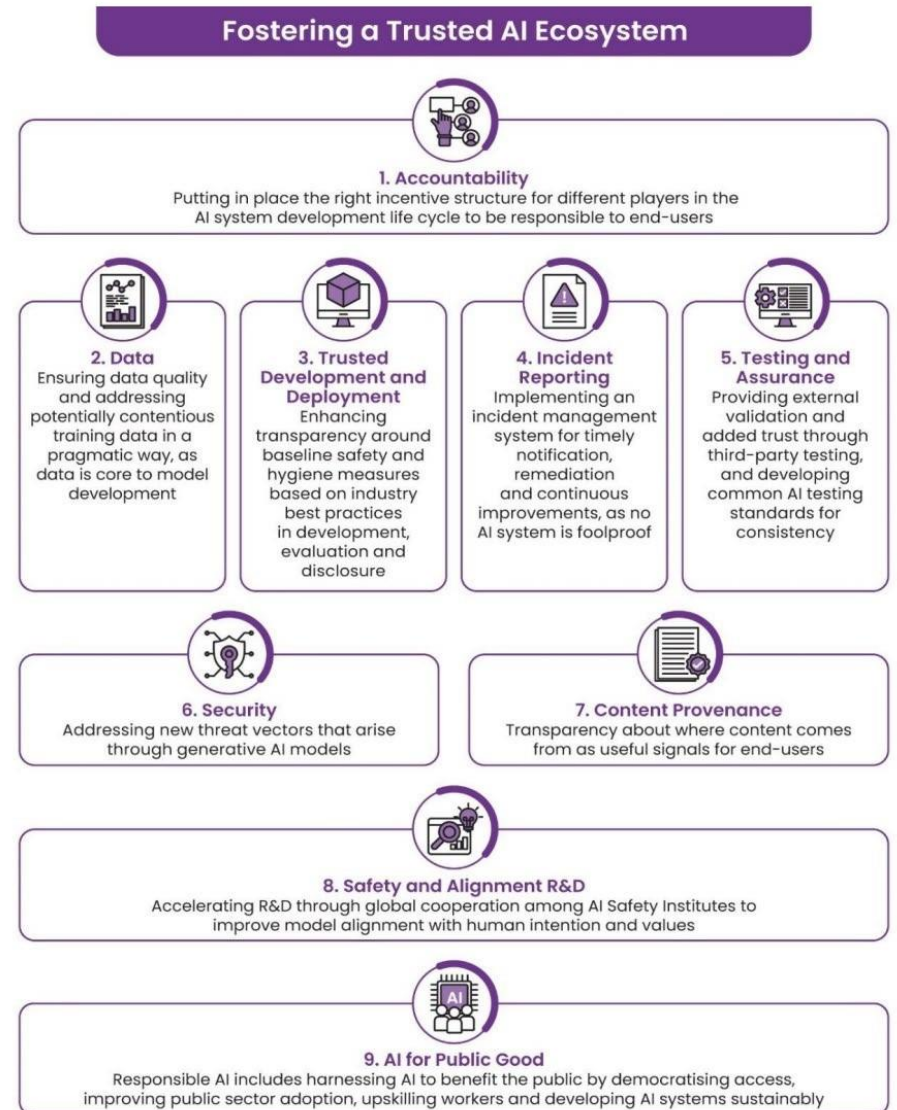
Governance Frameworks in Singapore

Non-profit and voluntary frameworks

- AI Singapore
- AI Verify Foundation launched in June 2023, supports development of AI Verify and validates AI systems against internationally recognized principles
 - Proposed model AI governance framework for GenAI, Issued by AI Verify Foundation on 16th January 2024

Reference:

https://aiverifyfoundation.sg/downloads/Proposed_MGF_Gen_AI_2024.pdf



How Do AI Frameworks Across Countries Differ?

Specific approaches and emphases vary, including:

Governance

- In SG, AI Ethics Advisory Council set up to provide guidance and oversight. In US, multiple agencies involved but no single overarching body.

Compliance

- GDPR has strict compliance requirements with significant penalties for non-compliance, whereas Japan encourages voluntary compliance and self-regulation.

Liability

- Canada has clear guidelines on liability of AI developers and users, whereas China focuses on state oversight and less on individual accountability

Standardisation Efforts

- Japan is playing an active role in international standard-setting bodies like ISO & IEC, but China is developing its own standards

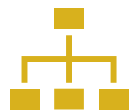
On balance, these frameworks help to drive **adoption and awareness** of AI minimally at a national level through collaboration, risk mitigation, best practices. Important to bear in mind key watchouts as we adopt a global mindset towards adopting GenAI (see next slide)

Checklist to Deploy Gen AI Systems



Transparency

GenAI systems should be transparent about their capabilities, limitations, and potential biases.



Accountability

Developers and users of GenAI systems should be accountable for the outcomes generated by these systems.



Ethical Considerations

GenAI systems should adhere to ethical principles such as fairness, non-discrimination, and respect for privacy.



Data Protection

Compliance with the EU AI Act requires adherence to data protection regulations such as the General Data Protection Regulation (GDPR).



Human Oversight

GenAI systems should incorporate mechanisms for human intervention and control to mitigate risks and ensure responsible use.

Key Takeaway

Generative AI offers unprecedented opportunities for businesses to enhance efficiency, reduce costs, and focus on strategic tasks by automating routine operations. Whether through ChatGPT, Canva, or Microsoft Co-Pilot, leveraging these tools can transform how your business operates, while being mindful of the associated risks and their mitigations.

