

Applying AI — A Framework for the Enterprise

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Initiatives: [Artificial Intelligence](#)

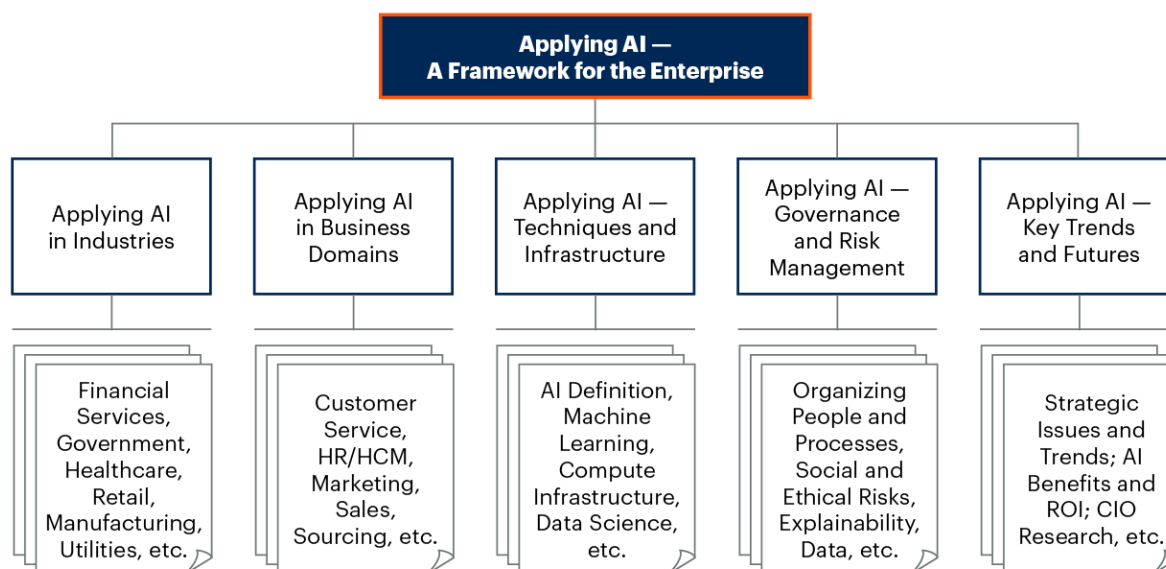
This report provides a comprehensive overview of artificial intelligence and of Gartner's AI-related research and analyst resources. Readers should use this top-level document, part of a series of six, to identify areas for deeper investigation, and to develop AI plans and strategies.

Analysis

Artificial intelligence (AI) is a part of over 50 separate research areas within Gartner. To make research and resources easier to locate, Gartner divides this broad topic into the research areas below. This top-level document is called **Applying AI — A Framework for the Enterprise**.

Figure 1: Locating AI-Related Research and Resources

Locating AI-Related Research and Resources



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The links below take you directly to the documents outlined in Figure 1.

- [Applying AI in Industries](#) describes where and how AI is applied in industries such as financial services, healthcare, retail, manufacturing and government.
- [Applying AI in Business Domains](#) describes where and how AI is applied within business domains and enterprise departments, such as customer service, HR, marketing and sales.
- [Applying AI – Techniques and Infrastructure](#) includes the fundamental techniques, practices and techniques that comprise AI and AI engineering.
- [Applying AI – Governance and Risk Management](#) includes strategies and methods related to transparency, interpretability, ethics, privacy and security issues. It also addresses personnel and skills development, staffing, developing AI centers of excellence and defining the ROI for AI projects.
- [Applying AI – Key Trends and Futures](#) focuses on the key trends and the future of AI, both in terms of strategic emerging technologies and key skills and governance options. It includes a focus on CIO and CTO executive priorities.

Research Highlights

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Applying AI in Industries

AI is applied in vertical areas to address industry-specific problems. In some cases, it is for competitive differentiation, but in other cases AI techniques are common to a particular sector. Industries generate industry-specific types of data, and may be subject to unique constraints, regulations and ethical codes. But they may use similar AI methods and algorithms and have similar business requirements. Industry segments covered include automotive, banking, financial services, healthcare, retail, government and higher education.

Analyst coverage is often specific to each industry. For general information on AI in industry, the following analysts may be of assistance: [Pieter den Hamer](#), [Moutusi Sau](#), [Jim Hare](#)

Below are a few of the more popular general Gartner research notes related to AI in industries:

- [Applying AI in Industries](#)
- [Toolkit: Use AI Use Cases' Strategic Industry Maps for Your Planning](#)
- [Tool: Sample Use Cases to Help Prioritize AI Investment](#)

Applying AI in Business Domains

AI applications solve a broad range of problems within an enterprise or organization. In many cases, these solutions address needs that are common across multiple business domains. For instance, AI can be used to improve human capital management and recruiting, marketing, sales and lead management, customer service and support, security and fraud, and corporate legal practice.

Analyst coverage is often specific to each business area. For general information on AI in business domains, the following analysts may be of assistance: [Melissa Davis](#), [Moutusi Sau](#), [Bern Elliot](#), [Alexander Linden](#), [Farhan Choudhary](#)

Below are popular Gartner research notes related to AI in business domains:

- [Applying AI in Business Domains](#)
- [Tool: Sample Use Cases to Help Prioritize AI Investment](#)
- [Uncovering Artificial Intelligence Business Opportunities in Over 20 Industries and Business Domains](#)

Applying AI – Techniques and Infrastructure

The discipline of AI consists of a broad range of techniques and methods, including algorithms, data management, AI engineering, AI operations, augmented intelligence and composite AI systems. Applied areas include data science, machine learning, natural language technologies such as text analytics and conversational platforms, and advanced computer vision. Our research covers all these areas, and also discusses how AI techniques reshape existing architectures and how AI integrates with existing processes or applications.

Analyst coverage is often specific to technique and area. For general information on AI techniques and infrastructure, the following analysts may be of assistance: [Farhan Choudhary](#), [Afriz Jaffri](#), [Pieter den Hamer](#), [Shubhangi Vashisth](#)

Below are a few of the more popular research notes related to AI techniques and infrastructure:

- [Applying AI – Techniques and Infrastructure](#)
- [5 Steps to Practically Implement AI Techniques](#)
- [How Augmented DSML Makes Data Science Projects More Efficient](#)
- [Artificial Intelligence Maturity Model](#)
- [Simple, Four-Step Quantitative Model Risk Assessment Process](#)

Applying AI – Governance and Risk Management

As AI techniques and their implementations proliferate within organizations, it becomes critical to organizations to develop an AI strategy that addresses the governance of these techniques. Governance strategies must include (but should not be limited to) transparency, interpretability, ethics, privacy, trusted autonomy and security issues. Organizations will have to introduce a governance framework that should address the discovery, upskilling and sharing of AI competencies. Organizational considerations aimed at marshalling AI techniques, tools and competencies are also in the AI governance domain.

Analyst resources:

- Governance and managing AI risks — [Svetlana Sicular](#), [Frank Buytendijk](#), [Avivah Litan](#), [Martin Reynolds](#)
- Governance for organizing for AI — [Ethan Cohen](#), [Avivah Litan](#)
- ModelOps — [Farhan Choudhary](#), [Shubhangi Vashisth](#), [Sumit Agarwal](#), [Soyeb Barot](#)

Below are popular research notes related to AI governance and risk management:

- [Applying AI – Governance and Risk Management](#)
- [Top 5 Priorities for Managing AI Risk Within Gartner's MOST Framework](#)
- [AI Security: How to Make AI Trustworthy](#)
- [Demystifying XOps: From DataOps to ModelOps and Platform Ops for AI](#)

Applying AI — Key Trends and Futures

The AI discipline is evolving rapidly and will continue to be a critical area of differentiation and productivity improvement. Attention to emerging techniques and practices is required by practitioners, leaders and CIOs, all of whom must anticipate the changes and understand their strategic implications. Key CIO issues include ethical use, employee augmentation and strategic differentiation. Crucial AI leader issues include investment priorities and emerging trends like generative AI techniques, as well as upcoming hardware innovation such as quantum computing or neuromorphic chips. Also crucial to consider are the emerging practices and new applications that will require new skills and governance mechanisms.

Analyst resources:

- AI Strategic issues and trends — [Jim Hare](#), [Farhan Choudhary](#), [Anthony Mullen](#), [Erick Brethenoux](#), [Bern Elliot](#), [Shubhangi Vashisth](#), [Svetlana Sicular](#)
- AI benefits and ROI — [Jim Hare](#), [Bern Elliot](#), [Pieter den Hamer](#), [Moutusi Sau](#), [Alexander Linden](#), [Farhan Choudhary](#), [Whit Andrews](#), [Alys Woodward](#)
- CIO-focused resources — [Whit Andrews](#), [Jorge Lopez](#)

Below are popular research notes related to the future of AI:

- [Applying AI — Key Trends and Futures](#)
- [Hype Cycle for Artificial Intelligence, 2020](#)
- [Hype Cycle for Data Science and Machine Learning, 2020](#)
- [Hype Cycle for Natural Language Technologies, 2021](#)
- [Executive Leadership: Artificial Intelligence Primer for 2021](#)
- [Top Strategic Technology Trends for 2021: AI Engineering](#)

Recommended by the Authors

Some documents may not be available as part of your current Gartner subscription.

[Artificial Intelligence Primer for 2021](#)

[Artificial Intelligence Maturity Model](#)

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