

# gartner emerging technologies and trends impact radar

Gartner Emerging Technologies and Trends Impact Radar: Navigating the Future of Innovation

**gartner emerging technologies and trends impact radar** is a crucial tool for businesses, technologists, and strategists eager to stay ahead in an ever-evolving digital landscape. Each year, Gartner compiles and analyzes a wide array of emerging technologies, mapping their potential impact and maturity on the “impact radar.” This resource helps organizations identify which innovations are poised to disrupt industries, transform business models, and unlock new opportunities. If you’re curious about how this radar works and why it matters, you’re in the right place.

## What Is the Gartner Emerging Technologies and Trends Impact Radar?

At its core, the Gartner Emerging Technologies and Trends Impact Radar is a visual framework designed to spotlight technologies that have the potential to reshape the way we live and work. Unlike traditional hype cycles or magic quadrants, the impact radar focuses specifically on the expected business impact and maturity timelines of various innovations. It serves as a forward-looking guide for decision-makers, enabling them to allocate resources more effectively and innovate strategically.

This radar categorizes technologies based on their expected impact timeframe—short-term (within 0-2 years), mid-term (2-5 years), and long-term (5+ years)—as well as the magnitude of their influence across industries. By doing so, Gartner provides a nuanced perspective that balances hype with practical adoption realities.

## How the Impact Radar Helps Organizations

The value of the Gartner emerging technologies and trends impact radar lies in its ability to translate complex technological shifts into actionable insights. Organizations can use the radar to:

- **Prioritize investment:** Focus resources on technologies that promise the greatest competitive advantage within relevant timeframes.
- **Drive innovation:** Identify emerging trends early to foster innovation pipelines and avoid being blindsided by disruptive forces.
- **Mitigate risk:** Understand which technologies are still maturing and might carry higher implementation risks.
- **Shape strategy:** Align business strategies with upcoming technological changes to enhance agility and responsiveness.

Whether you're in IT leadership, product development, or strategic planning, the radar offers a valuable compass in a rapidly shifting technology ecosystem.

## **Key Emerging Technologies Highlighted on the Radar**

Each iteration of the Gartner emerging technologies and trends impact radar introduces a fresh set of technologies and trends that are expected to shape the future. While the specific technologies vary year to year, certain themes and innovations consistently appear due to their transformative potential.

### **Artificial Intelligence and Machine Learning Advancements**

AI continues to dominate the radar, with advancements not only in core machine learning algorithms but also in areas like generative AI, AI governance, and explainable AI. The impact radar points out that businesses investing in AI-driven automation, natural language processing, and intelligent decision-making are poised to unlock significant productivity gains and customer engagement improvements.

The radar also emphasizes the importance of responsible AI adoption, highlighting technologies that support transparency, fairness, and compliance—critical factors as AI becomes more embedded in day-to-day operations.

### **Edge Computing and Distributed Cloud**

With the explosion of IoT devices and data generation at the network's edge, edge computing is another major focus on Gartner's impact radar. By processing data closer to its source, organizations can reduce latency, improve performance, and enhance real-time analytics capabilities.

Distributed cloud technologies complement this trend by enabling consistent cloud services across multiple physical locations. These innovations are particularly impactful in industries like manufacturing, healthcare, and autonomous vehicles, where rapid data processing is essential.

### **Quantum Computing and Next-Gen Security**

While still largely in the research and early adoption phase, quantum computing is a long-term technology on the radar that promises to revolutionize problem-solving capabilities, especially in cryptography, optimization, and complex simulations.

In tandem, next-generation cybersecurity technologies—including post-quantum cryptography and AI-powered threat detection—are gaining attention. As cyber threats evolve, these cutting-edge security solutions are becoming vital to protect sensitive data and maintain trust.

# Interpreting the Radar: What Businesses Should Watch For

Understanding the Gartner emerging technologies and trends impact radar is only half the battle. The real challenge lies in interpreting its insights in ways that align with your organization's goals and capacities.

## Balancing Innovation with Practicality

Not every technology on the radar will be a fit for every business. Early-stage innovations might appear exciting but require significant investment and organizational change. Companies need to weigh the hype against their readiness and the technology's maturity.

For instance, while generative AI tools are gaining traction rapidly, integrating them effectively into existing workflows demands a clear strategy and skilled personnel. Similarly, edge computing offers remarkable benefits but might necessitate revamping infrastructure and security protocols.

## Spotting Industry-Specific Opportunities

The impact radar also encourages looking beyond generic trends to identify technologies tailored for particular sectors. For example:

- **Healthcare:** Technologies like digital twins and AI-enabled diagnostics are driving personalized medicine and operational efficiency.
- **Retail:** Augmented reality and advanced analytics are transforming customer experiences and supply chain management.
- **Finance:** Blockchain and decentralized finance (DeFi) innovations are disrupting traditional banking and asset management models.

By focusing on industry-relevant technologies highlighted in the radar, organizations can create more targeted innovation strategies.

## Tips for Leveraging the Gartner Emerging Technologies and Trends Impact Radar

To make the most of the insights offered by the radar, consider these practical tips:

1. **Engage cross-functional teams:** Innovation should involve stakeholders from IT, business units, compliance, and finance to ensure holistic assessment and buy-in.
2. **Conduct pilot projects:** Before full-scale adoption, experimenting with emerging technologies in controlled environments helps validate benefits and identify challenges.
3. **Stay updated:** Emerging technologies evolve rapidly; regularly revisiting the radar and related Gartner research ensures your strategy remains relevant.
4. **Invest in talent development:** Upskilling teams to work with new tools and frameworks is essential for successful technology integration.

These steps can help organizations transform the radar's insights into tangible business outcomes.

## The Broader Impact of Emerging Technologies on Business and Society

The Gartner emerging technologies and trends impact radar not only influences business strategies but also offers a glimpse into how technology shapes societal evolution. Innovations like AI-powered healthcare diagnostics have the potential to improve patient outcomes globally, while advancements in renewable energy tech contribute to sustainability goals.

Moreover, ethical considerations—such as data privacy, algorithmic bias, and digital equity—are becoming integral to discussions around emerging technologies. The radar increasingly highlights responsible innovation, signaling that future technological impact is as much about societal benefit as business advantage.

Exploring these dimensions helps leaders think beyond immediate gains and consider long-term implications, fostering technology adoption that is both impactful and conscientious.

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Navigating the rapidly changing technology landscape can feel overwhelming, but tools like the Gartner emerging technologies and trends impact radar provide a valuable lens to make sense of it all. By understanding the radar's insights and integrating them thoughtfully into strategy, organizations can not only keep pace with innovation but also lead the way in shaping the future.

## Frequently Asked Questions

### What is the Gartner Emerging Technologies and Trends Impact Radar?

The Gartner Emerging Technologies and Trends Impact Radar is a research tool that identifies and evaluates emerging technologies and trends, assessing their potential impact on businesses and

industries over different time horizons.

## **How does Gartner categorize technologies in the Emerging Technologies and Trends Impact Radar?**

Gartner categorizes technologies based on their expected impact timeframe, typically short-term (within 2 years), mid-term (3-5 years), and long-term (beyond 5 years), as well as their potential business impact and maturity level.

## **Why is the Gartner Emerging Technologies and Trends Impact Radar important for businesses?**

It helps businesses anticipate disruptive technologies, prioritize investments, and develop strategic plans by providing insights into emerging trends that could affect their industry and operations.

## **How often does Gartner update the Emerging Technologies and Trends Impact Radar?**

Gartner typically updates the Emerging Technologies and Trends Impact Radar annually or semi-annually to reflect the latest developments and shifts in technology adoption and impact projections.

## **Can startups benefit from the Gartner Emerging Technologies and Trends Impact Radar?**

Yes, startups can use the radar to identify emerging opportunities, align their innovation strategies, and stay ahead of market trends that could influence their growth and competitive positioning.

## **What industries can leverage insights from the Gartner Emerging Technologies and Trends Impact Radar?**

A wide range of industries such as IT, healthcare, finance, manufacturing, and retail can leverage the radar's insights to understand technological disruptions and adapt their business models accordingly.

## **How does Gartner determine the impact of emerging technologies in the radar?**

Gartner evaluates technologies based on criteria including market readiness, potential to disrupt existing processes, scalability, adoption rates, and the overall influence on business outcomes and customer experiences.

## **Where can one access the Gartner Emerging Technologies and Trends Impact Radar report?**

The report is available through Gartner's official website, typically requiring a subscription or purchase. Some insights and summaries may also be accessible via Gartner webinars, blogs, or industry conferences.

# Additional Resources

## Gartner Emerging Technologies and Trends Impact Radar: A Deep Dive into Future Innovations

**gartner emerging technologies and trends impact radar** serves as a pivotal framework for organizations, investors, and technology enthusiasts aiming to navigate the rapidly evolving landscape of technological innovation. This specialized radar identifies and evaluates nascent technologies and trends, assessing their potential impact on industries and society over varying time horizons. As businesses increasingly rely on digital transformation and innovation to maintain competitive edges, understanding the insights offered by Gartner's Emerging Technologies and Trends Impact Radar becomes indispensable.

## Understanding the Gartner Emerging Technologies and Trends Impact Radar

The Gartner Emerging Technologies and Trends Impact Radar is more than just a forecast tool; it embodies a strategic compass that guides decision-makers through the complex terrain of emerging technologies. Unlike traditional hype cycles or technology maturity models, this radar emphasizes the anticipated impact and time to mainstream adoption, helping organizations prioritize investments and innovation efforts.

At its core, the radar categorizes technologies based on their potential to disrupt markets or create new opportunities within a defined timeframe—usually within the next three to five years. It highlights technologies poised to transform business processes, consumer experiences, regulatory landscapes, and even societal norms.

## Key Features of the Impact Radar

- **Impact Assessment:** Technologies are evaluated on their transformative potential, gauging how significantly they might influence business models and ecosystems.
- **Time Horizon:** Forecasting when technologies are expected to reach mainstream adoption, helping enterprises align innovation roadmaps.
- **Trend Analysis:** Identification of overarching trends that shape multiple technologies, such as AI democratization or sustainability-driven innovations.
- **Sector Relevance:** Insights tailored to specific industries, allowing vertical-specific strategies and risk mitigation.

# Key Technologies Highlighted in Recent Radars

The Gartner Emerging Technologies and Trends Impact Radar consistently spotlights a range of technologies that are gaining traction and are predicted to influence the next wave of digital transformation.

## Artificial Intelligence and Machine Learning

AI remains a dominant presence on the radar, with particular emphasis on generative AI models, autonomous systems, and AI-powered analytics. The impact of AI technologies spans enhanced decision-making, automation of complex tasks, and personalized customer experiences. However, challenges such as ethical considerations, bias mitigation, and data privacy persist alongside these advancements.

## Quantum Computing

While still nascent, quantum computing is gaining attention due to its potential to solve problems beyond the capabilities of classical computers. Gartner's radar highlights quantum's expected influence primarily in cryptography, optimization, and material science, with widespread commercial use likely several years away.

## Extended Reality (XR) Technologies

Virtual reality (VR), augmented reality (AR), and mixed reality (MR) continue to evolve, driven by improvements in hardware accessibility and software capabilities. The radar underscores XR's rising role in education, healthcare, and remote work, signaling a shift toward immersive digital environments.

## Sustainability-Driven Technologies

Sustainability has become a critical lens through which emerging technologies are evaluated. Innovations that support energy efficiency, carbon reduction, and circular economy models are increasingly featured on the radar, reflecting broader corporate and regulatory priorities.

## Analyzing the Radar's Impact on Business Strategy

For enterprises, the Gartner Emerging Technologies and Trends Impact Radar is a strategic asset that informs innovation pipelines and risk management frameworks. Integrating radar insights enables organizations to anticipate disruption and harness emerging technologies proactively.

## Prioritization of Technology Investments

By understanding which technologies are likely to have the most significant impact within a relevant timeframe, businesses can allocate resources more effectively. This prioritization reduces the risk of chasing fleeting trends while ensuring early adoption of transformative innovations.

## Fostering Innovation Culture

The radar encourages a culture of continuous learning and experimentation. Organizations that monitor evolving technologies through the radar are better positioned to pilot new solutions, collaborate with startups, and adapt to changing market demands.

## Enhancing Competitive Intelligence

Monitoring emerging technologies helps companies anticipate moves from competitors and new market entrants. The radar's comprehensive scope facilitates benchmarking and scenario planning, crucial for sustaining a competitive advantage.

## Challenges and Considerations in Using the Gartner Radar

While the Gartner Emerging Technologies and Trends Impact Radar offers valuable foresight, it is not without limitations. Organizations must approach it as one component within a broader strategic toolkit.

- **Forecast Uncertainty:** Predicting technological impact and adoption timelines involves inherent uncertainties, especially for breakthrough innovations.
- **Industry-Specific Variability:** A technology's impact can vary significantly across sectors, necessitating contextual interpretation of radar insights.
- **Overemphasis on Emerging Trends:** Focusing too heavily on emerging technologies might divert attention from optimizing existing capabilities or addressing immediate business challenges.

## Comparing Gartner's Radar with Other Technology



# Forecasting Tools

Gartner's Emerging Technologies and Trends Impact Radar distinguishes itself through its dual focus on impact and adoption horizon, setting it apart from other models like the Hype Cycle or Technology Readiness Levels (TRLs).

- The **Hype Cycle** emphasizes the maturity and visibility of technologies but often concentrates on the emotional and market sentiment aspects, which can lead to overhyped expectations.
- The **Technology Readiness Level** framework assesses technical maturity without explicitly addressing market impact or adoption timelines.
- Gartner's radar offers a more balanced approach by integrating impact assessments with strategic timelines, aligning technology scouting with business value realization.

This multifaceted perspective makes the radar particularly useful for C-suite executives, innovation leaders, and portfolio managers.

## The Future Trajectory of Emerging Technologies on Gartner's Radar

Looking ahead, the Gartner Emerging Technologies and Trends Impact Radar is expected to evolve alongside the rapid pace of innovation. Areas like decentralized finance, bioinformatics, and advanced robotics are likely to gain prominence. Additionally, as geopolitical dynamics and regulatory environments shift, the radar's assessments will increasingly incorporate societal and ethical dimensions.

Investments in artificial intelligence governance, privacy-enhancing technologies, and resilient digital infrastructure may shape the radar's focus as enterprises seek not only innovation but also sustainable and responsible technology deployment.

Ultimately, the Gartner Emerging Technologies and Trends Impact Radar remains a vital instrument in mapping the future of technology. By systematically tracking and analyzing emerging trends, it empowers organizations to make informed decisions that balance innovation with strategic foresight, ensuring readiness for the next wave of technological disruption.

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**gartner emerging technologies and trends impact radar:** *Digital Disruption and Media Transformation* Alexander Godulla, Stephan Böhm, 2023-10-19 This book presents a comprehensive compilation of the latest research into digital disruption in the media industry. The perspectives are

differentiated into innovation triggers in the media industry stemming from the economy, society and technology. In addition, the book highlights selected case studies exploring new media actors and usage, innovation and disruption in media organizations, emerging media platforms and channels, as well as innovative media topics and events. The book is intended for researchers in communication sciences and media research, as well as media practitioners who want to understand the causes and effects of digital transformation in the media industry.

**gartner emerging technologies and trends impact radar:** The Truth about Transformation Kevin Novak, 2023-07-22 "Any organization that seeks transformation desires to take advantage of new opportunities and growth. Most organizations turn to technology as the major driver of change. But technology is an enabler, not a silver bullet. Mistaking technology for transformation will lead an organization to failure. True transformative change requires an understanding of the human factors at play, how conscious and subconscious behaviors can derail any plan, and how society is influencing your organization. Change is the only constant. An evolving reality is emerging, one that will fundamentally change who we are, how we work, and how organizations will be relevant today and in the future. The truth about transformation is not what you may think. This guide to organizational transformation will surprise, confound, provoke, and challenge every ingrained belief. The future is out there, and the truth about transformation will change how you lead."

**gartner emerging technologies and trends impact radar:** *AI Battle Royale* Ashley Marc Recanati, 2023-03-26 AI, Big Data and other 4th Industrial Revolution technologies are poised to wreak havoc in virtually every industry, unlocking huge productivity gains via automation of labor both manual and cognitive. Less discussed are the impacts on workers, who see the value of their skills erode, along with the menace of mass structural unemployment. How can workers assess their vulnerabilities? What can they do to improve their prospects, effectively immediately? In this book, you will learn how to: - Survey new tech and decrypt their potential impacts on work - Assess your strengths and weaknesses in the face of AI, the shared economy, and other tech-propelled threats - Foment a battle plan to survive and thrive Ashley Recanati provides guidance for employees to rise above their peers and preserve their value, in a book that will interest managers and scholars, but foremost destined to ordinary workers.

**gartner emerging technologies and trends impact radar:** *Harnessing Generative AI* N. Gayathri, S. Rakesh Kumar, Ramesh Chandran, Pethuru Raj, Danilo Pelusi, 2025-07-09 This book is essential for anyone eager to understand the groundbreaking advancements in generative AI and its transformative effects across industries, making it a valuable resource for both professional growth and creative inspiration. *Generative AI: Disruptive Technologies for Innovative Applications* delves into the exciting and rapidly evolving world of generative artificial intelligence and its profound impact on various industries and domains. This comprehensive volume brings together leading experts and researchers to explore the cutting-edge advancements, applications, and implications of generative AI technologies. This volume provides an in-depth exploration of generative AI, which encompasses a range of techniques such as generative adversarial networks, recurrent neural networks, and transformer models like GPT-3. It examines how these technologies enable machines to generate content, including text, images, and audio, that closely mimics human creativity and intelligence. Readers will gain valuable insights into the fundamentals of generative AI, innovative applications, ethical and social considerations, interdisciplinary insights, and future directions of this invaluable emerging technology. *Generative AI: Disruptive Technologies for Innovative Applications* is an indispensable resource for researchers, practitioners, and anyone interested in the transformative potential of generative AI in revolutionizing industries, unleashing creativity, and pushing the boundaries of what's possible in artificial intelligence. Audience AI researchers, industry professionals, data scientists, machine learning experts, students, policymakers, and entrepreneurs interested in the innovative field of generative AI.

**gartner emerging technologies and trends impact radar:** *Industrial Engineering in the Covid-19 Era* Fethi Calisir, Murat Durucu, 2023-02-05 This book gathers extended versions of the best papers presented at the Global Joint Conference on Industrial Engineering and Its Application

Areas (GJCIE), held as a hybrid event on October 29–30, 2022, in/from Istanbul Technical University. Continuing the tradition of previous volumes, it highlights recent developments of industrial engineering at the purpose of using and managing digital and intelligent technologies for application to a wide range of field, including manufacturing, healthcare, e-commerce and sustainable development. A special emphasis is given to engineering methods and strategies for managing pandemics and reducing their adverse effects on businesses.

**gartner emerging technologies and trends impact radar:** De Gruyter Handbook of Media Technology and Innovation Richard A. Gershon, 2025-01-27 The De Gruyter Handbook of Media Technology and Innovation brings together scholars from around the world to provide key insights on emerging technology trends and issues related to the fields of media management, information technology, product design planning and digital lifestyle. This handbook is about the power of good ideas. It's about those business enterprises, government planners, educators and entrepreneurs that have harnessed the power of good ideas to become real difference makers in the world we live in. Keeping pace with fast paced technology change requires ongoing assessment and reassessment of the media management and technology fields to address important questions and emerging issues. A major premise of this book is that given the complex and ever-changing state of media technology - we have a responsibility and obligation to engage in a broader interdisciplinary dialogue whose purpose is to understand the current and future state of media technology and innovation as well as to appreciate the social impact that such technologies have on business, education and the general public. Forecasting the future, as any weatherperson or stock broker can tell you, is a risky business. But in this book we use the phrase the creative next step as a way to talk about the future and what we can expect in terms of the opportunities and challenges going forward.

**gartner emerging technologies and trends impact radar:** Metamodeling for Extended Reality Fabian Muff, 2025-02-12 This open access book which is based on the author's dissertation in 2024 explores the challenges of metamodeling in the context of extended reality and emphasizes the need for new concepts in metamodeling to effectively combine it with extended reality technologies. The central question of this work is how metamodeling can be used "in" and "for" extended reality. The book is structured in nine chapters: Chapter 1 introduces the topic by providing background information and outlining the research objectives, questions, methodology and structure. Chapter 2 delves into the existing literature and developments in the field. It covers various aspects of modeling, such as conceptual, enterprise, and metamodeling, as well as extended reality (XR), virtual reality (VR), augmented reality (AR), and the metaverse. Next, chapter 3 presents the generic requirements for metamodeling for augmented and virtual reality by systematically deriving use cases for joining AR and metamodeling. Chapter 4 then identifies specific requirements for integrating metamodeling with XR, such as coordinate mappings, visualization of model components, detection and tracking, context, or interaction. Subsequently, chapter 5 introduces a new domain-specific visual modeling language for creating augmented reality scenarios, particularly within the context of metamodeling, before chapter 6 outlines the conceptualization and design of a 3D enhanced metamodeling platform considering extended reality, detailing its structure, components, and the interconnection of its elements. Chapter 7 then presents the initial implementation of the various components of this modeling platform, and chapter 8 evaluates the newly introduced platform both theoretically and empirically. Eventually, chapter 9 concludes the book by an alignment with the initial research questions, discussing limitations, and provides a final summary and an outlook for further research. This book mainly aims at researchers in conceptual modeling, especially in projects related to XR, VR, or AR, as the presented new domain-specific modeling method for creating workflows for XR/VR/AR applications does not assume specific prior programming knowledge.

**gartner emerging technologies and trends impact radar: Enterprise Design, Operations, and Computing. EDOC 2023 Workshops** Tiago Prince Sales, Sybren de Kinderen, Henderik A. Proper, Luise Pufahl, Dimka Karastoyanova, Marten van Sinderen, 2024-03-01 This volume constitutes revised selected papers of several workshops, the EDOC Forum and the Demonstrations

and Doctoral Consortium track, which were held in conjunction with the 27th International Conference on Enterprise Design, Operations, and Computing, EDOC 2023, in Groningen, The Netherlands, during October 30–November 3, 2023. The 18 revised full papers and 7 short papers presented in this book were carefully reviewed and selected from 37 submissions. They stem from the following satellite events: - Workshop on Intelligent Digital Architecture, Methods, and Services for Industry 4.0 and Society 5.0 (IDAMS) - Workshop on Empirical Methodologies for Research in Enterprise Architecture and Service-Oriented Computing (iRESEARCH) - Workshop on the Modelling and Implementation of Digital Twins for Complex Systems (MIDAs4CS) - Workshop on Service-oriented Enterprise Architecture for Enterprise Engineering (SoEA4EE) - EDOC Forum - Demonstrations Track - Doctoral Consortium

**gartner emerging technologies and trends impact radar: Practical Applications of Self-Service Technologies Across Industries** Verma, Balraj, Schulze, Mike, Olubiyi, Timi, Upreti, Kamal, 2025-06-18 Self-service technologies (SSTs) have practical applications across various industries, improving operational efficiency and customer satisfaction. In retail, self-checkout kiosks and mobile payment apps streamline the purchasing process, reducing waiting times and enhancing convenience. The hospitality industry utilizes SSTs through self-service check-in kiosks and digital concierge services. In healthcare, patients can use self-service portals to schedule appointments, access medical records, and complete pre-visit forms. In banking and finance, ATMs, mobile apps, and AI-powered chatbots offer access to essential services without the need for in-person assistance. These practical implementations demonstrate the versatility and importance of SSTs in modernizing service delivery across sectors. Practical Applications of Self-Service Technologies Across Industries explores self-service technology (SST) as a transformative force across industries. It examines practical applications of SST for improved customer service and business operations. This book covers topics such as smart technology, consumer behavior, and blockchain, and is a useful resource for business owners, computer engineers, academicians, researchers, and data scientists.

**gartner emerging technologies and trends impact radar: Artificial Intelligence in HCI** Helmut Degen, Stavroula Ntoa, 2025-05-29 The four-volume set LNAI 15819–15822 constitutes the thoroughly refereed proceedings of the 6th International Conference on Artificial Intelligence in HCI, AI-HCI 2025, held as part of the 27th International Conference, HCI International 2025, which took place in Gothenburg, Sweden, June 22–17, 2025. The total of 1430 papers and 355 posters included in the HCII 2025 proceedings was carefully reviewed and selected from 7972 submissions. The papers have been organized in topical sections as follows: Part I: Trust and Explainability in Human-AI Interaction; User Perceptions, Acceptance, and Engagement with AI; UX and Socio-Technical Considerations in AI Part II: Bias Mitigation and Ethics in AI Systems; Human-AI Collaboration and Teaming; Chatbots and AI-Driven Conversational Agents; AI in Language Processing and Communication. Part III: Generative AI in HCI; Human-LLM Interactions and UX Considerations; Everyday AI: Enhancing Culture, Well-Being, and Urban Living. Part IV: AI-Driven Creativity: Applications and Challenges; AI in Industry, Automation, and Robotics; Human-Centered AI and Machine Learning Technologies.

**gartner emerging technologies and trends impact radar: Green AI-Powered Intelligent Systems for Disease Prognosis** Khanna, Ashish, Gochhait, Saikat, 2024-08-23 Experts in Medicine are under new pressures of advancing their studies while also reducing the impact they leave on the environment. Researchers within the fields of bio-neuro informatics, healthcare, engineering, and medical sciences require a dynamic platform that bridges the realms of academia, science, industry, and innovation. Green AI-Powered Intelligent Systems for Disease Prognosis facilitates a crossroads for a diverse audience interested in these two seldom coalesced concepts. Academicians, scientists, researchers, professionals, decision-makers, and even aspiring scholars all find a space to contribute, collaborate, and learn within the platform that this book provides. The book's thematic coverage is unequivocally compelling; by exploring the intersections of bio-neuro informatics, healthcare, engineering, and medical sciences, it captures the spirit of interdisciplinary research. It delves into well-established domains while also casting a spotlight on emerging trends that have the

potential to reshape our understanding of these fields. Two prominent tracks form the backbone of the book's content. The first covers the Bioinformatics and Data Mining of Biological Data (BiDMBD), and unravels the intricacies of biomedical computation, signal analysis, clinical decision support, and health data mining. This approach holds a treasure trove of insights into the mechanisms of health data acquisition, clinical informatics, and the representation of healthcare knowledge. The second covers Biomedical Informatics and is a symposium of computational modeling, genomics, and proteomics. Here, the fusion of data science with medical sciences takes center stage.

**gartner emerging technologies and trends impact radar: Mindshift** Brian Solis, 2024-10-15 National Bestseller! Rethink Your Mindset to Reshape the Future Every company needs leaders who can spot and seize on opportunities at a moment's notice. Every organization needs leaders who can rally teams together around new opportunities. Those who can see important, emerging trends foresee the coming disruption and harness those forces, translate them into actionable insights and motivation to fuel their company's march into the future rather than ignoring or running or hiding from opportunities. In Mindshift: Transform Leadership, Drive Innovation, and Reshape the Future, technologist, strategist, keynote speaker, and award-winning author Brian Solis, Head of Global Innovation at ServiceNow, draws on his experience of leading initiatives that drive innovation and business transformation to deliver the empowering message that this is the time to change the world for the better. And that change starts with you. In this book, you'll discover why legacy leadership continues to miss the mark and fail to adequately account for change and innovation, causing people to miss the winds of opportunity or threats of disruption until it's too late. Let this inspire, not frustrate you. Within these pages, you'll gain access to the tools, insights, and lessons you need to become an unstoppable leader, regardless of your roles. You'll learn how to: Adapt for a post-industrial, AI-first world Find direction in uncertainty Spot and prioritize emerging trends Develop, spark, and embrace innovative ideas that create new value Learn to thrive in this new and shifting future Mindshift explains how you can make the mental shift to see past industrial-era business-as-usual mindsets, to become the visionary and voice for a future that doesn't yet exist. Embracing a mindshift opens your potential to new possibilities, breaking the shackles of the status quo, and unlocking alternative, more meaningful destinies. Mindshift is perfect for anyone who knows a better future is possible, and who wants to make an impact, to reshape the modern business landscape, and develop the skills they need to thrive in a perpetual state of uncertainty. Mindshift is a can't-miss resource for managers, executives, entrepreneurs, and anyone who cares about the future, their destiny, and the role they want to play in shaping tomorrow.

**gartner emerging technologies and trends impact radar: Improving Threat Detection, Network Security, and Incident Response With AI** Lutfi, Abdalwali, Almaayah, Mohammed, 2025-07-03 Artificial intelligence (AI) strengthens cybersecurity by enhancing threat detection, fortifying network security, and streamlining incident response. Traditional security systems often struggle to manage modern cyber threats. AI addresses this challenge by analyzing data in real-time, identifying patterns and anomalies that may indicate malicious activity. Machine learning algorithms detect attacks and threats faster than humans, allowing organizations to respond proactively. In network security, AI helps in monitoring traffic, predicting vulnerabilities, and automatically implementing protective measures. AI-driven incident response tools assess the breaches, contain threats, and initiate recovery protocols. As cyber threats evolve, integrating AI into security infrastructure is essential for maintaining resilience in the digital age. Improving Threat Detection, Network Security, and Incident Response With AI explores the role of AI in cybersecurity, focusing on its applications in threat detection, malware analysis, network security, and incident response. It examines key AI techniques such as machine learning, deep learning, and natural language processing (NLP) that are transforming cybersecurity operations. This book covers topics such as robotics, software engineering, and behavioral analysis, and is a useful resource for computer engineers, security professionals, academicians, researchers, and data scientists.

**gartner emerging technologies and trends impact radar: HCI in Mobility, Transport,**

**and Automotive Systems** Heidi Krömker, 2024-05-31 This book constitutes the refereed proceedings of the 6th International Conference on HCI in Mobility, Transport, and Automotive Systems, MobiTAS 2024, held as part of the 26th HCI International Conference, HCII 2024, which took place in Washington, DC, USA, during June 29-July 4, 2024. The total of 1271 papers and 309 posters included in the HCII 2024 proceedings was carefully reviewed and selected from 5108 submissions. The MobiTAS 2024 proceedings were organized in the following topical sections: Part I: Driver behavior and safety; human factors in automated vehicles; Part II: Urban mobility and public transportation; user experience and inclusivity in MobiTAS.

**gartner emerging technologies and trends impact radar: Fluidware** Franco Zambonelli, Giancarlo Fortino, Barbara Re, Mirko Viroli, 2024-07-12 This book provides an overview of the many approaches that can be adopted for programming and deploying highly-adaptive and large-scale IoT systems, with a specific focus on the key results achieved within the Fluidware research project. The authors start by presenting Fluidware, which develops a novel programming model for IoT services and applications, along with the associated and robust large-scale IoT services and applications. Starting from previous findings in the areas of field-based coordination, collective adaptive systems, stream computing and aggregate computing, the authors address the complexity of building modern, large-scale IoT systems, by a full-fledged engineering approach revolving around a new notion of distributed programming. The authors show how the key innovative idea of Fluidware is to abstract collectives of devices of the IoT fabric as sources, digesters, and targets of distributed flows of contextualized events, carrying information about data produced and actuating commands. The book is divided into three parts: (i) the first part is a general introduction to the Fluidware ideas and to the key problems associated with programming IoT systems, (ii) the second part presents the key results achieved within the Fluidware project; (iii) the third part identified open challenges and research directions.

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**gartner emerging technologies and trends impact radar: **Information Systems for Intelligent Systems**** Chakchai So-In, Narendra D. Londhe, Nityesh Bhatt, Meelis Kitsing, 2023-03-01 This book includes selected papers presented at World Conference on Information Systems for Business Management (ISBM 2022), held in Bangkok, Thailand, during September 2-3, 2022. It covers up-to-date cutting-edge research on data science, information systems, infrastructure and computational systems, engineering systems, business information systems, and smart secure systems.

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Katalin Feher, 2025-04-28 This groundbreaking book demystifies generative AI's transformative impact on media, socio-cultural dynamics, ethics, and policy. Defining generative AI as an evolutionary leap in the development of artificial intelligence, the author examines intricate human-machine interactions and socio-technical dynamics, advocating robust, proactive AI governance to address emerging uncertainties. The book is clearly structured into six key chapters, each exploring distinct aspects of the relationship between artificial intelligence, media, and society. The chapter on Transformation examines how machine behavior is reshaping our datafied society, questioning whether data is the new oil, or digital manure. Generative AI investigates the models and future impacts of generative AI as a co-intelligence, revisiting the Turing Test and analyzing societal-business impacts. AI Media explores the convergence of media and AI, highlighting robot journalism, synthetic content, and the disinformation era and discussing the trend toward high-risk optimism. Uncertainties addresses inherent unpredictability vs. strategic foresight, focusing on challenged business models, sustainability concerns, and emotional intelligence factors. Ethics analyzes generative morality and dual-use technology, covering trusted AI principles—from misuse to integrative solutions. Finally, Policy discusses governance, labor market impacts, the importance of human rights and power dynamics in generative AI. Each chapter also provides summaries of impact projects, reflective art, scholarly questions, and strategic takeaways—extended with a comprehensive glossary. This is an essential resource for scholars, students, policymakers, technologists, ethicists, and AI industry leaders seeking to rapidly understand and address the challenges and opportunities of generative AI and AI media in a cohesive framework.

**gartner emerging technologies and trends impact radar: MANTHAN The Faculty-Student Research Compendium** Dr. Nilesh Uttamrao Bankar , Dr. Mohasin Abbas Tamboli, 2025-06-09

**gartner emerging technologies and trends impact radar: High Impact Technologies Radar - Fourth Edition** Severino Meregalli, Gianluca Salviotti, 2022-06-30T00:00:00+02:00 The DEVO Lab HIT Radar is a support tool for the digital transformation of business. The Radar identifies emerging digital technologies through a methodology based on three questions: Which is, and could be, the impact of this technology on companies? How far is this technology from a “must adopt” decision? How quickly is this technology moving towards a full adoptability? This Fourth Edition of the General Report sums up the result of an intensive scouting performed in collaboration with the MIT Design Lab on the technology clusters Artificial Intelligence, Human Augmentation, Digital Infrastructure, IoT, Materials Printing, Advanced Robotics, grouping 16 technologies.

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