

ARTIFICIAL INTELLIGENCE (AI) 101

A BEGINNER'S GUIDE FOR SMALL BUSINESS OWNERS

USING INNOVATIVE TECHNOLOGY TO ENABLE BUSINESS

ARTIFICIAL INTELLIGENCE (AI) 101

- "Welcome everyone, in our hands today we hold the power to transform our business in ways we could only dream of a decade ago.
- As we stand on the brink of a new era, the era of Artificial Intelligence (AI), we have the ability to unlock unimaginable growth, efficiency, and customer satisfaction.
- The dawn of AI isn't a distant future event - it's here, and it's empowering small businesses like yours to compete on the global stage.
- Let's delve into how we can turn this power into reality with 'AI 101 for Small Business'."

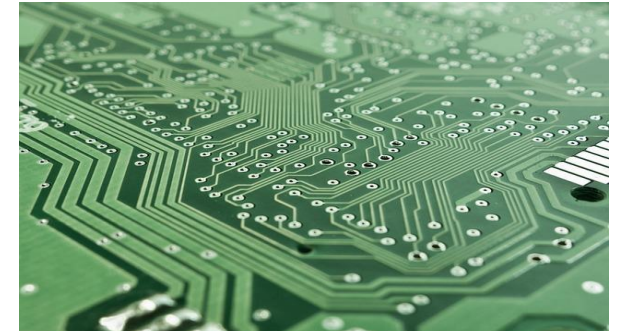


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WHAT IS ARTIFICIAL INTELLIGENCE (AI)

- Artificial Intelligence or AI, is a field of computer science focused on creating intelligent machines that can perform tasks requiring human-like intelligence.
- This subset of AI, known as **Generative AI**, focuses on creating machines that can produce original and creative outputs, such as generating images, music, or text.



HYPE & FEAR

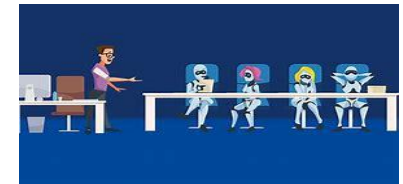
HYPE

1. Artificial General Intelligence (AGI): Surpassing human intelligence.
2. Sci-Fi Scenarios: AI as a threat or possessing human-like consciousness.



FEARS

1. Job Displacement: Concerns about potential job losses due to AI advancements'.
2. Bias and Discrimination: Risks of AI systems perpetuating biases present in training data, leading to discriminatory outcomes.
3. Privacy and Security: Misuse of personal information in AI systems.
4. Autonomous Weapons: Deployment of AI-powered autonomous weapons.

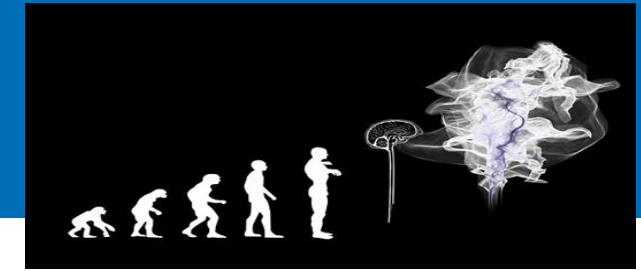


TOP HISTORY DATA POINTS IN INNOVATIVE TECHNOLOGY

1. **The Wheel (around 3500 B.C.):** A significant technological invention that transformed transport, trade, and warfare.
2. **Printing Press (1440):** Invented by Johannes Gutenberg, it revolutionized the way information was shared, fostering the spread of literacy and knowledge.
3. **Steam Engine (1712):** Developed by Thomas Newcomen and later improved by James Watt, it revolutionized transport and industry, leading to the Industrial Revolution.
4. **Electricity (19th Century):** The understanding and harnessing of electricity by inventors like Thomas Edison and Nikola Tesla led to electric light, power utilities, and much more.
5. **Telephone (1876):** Invented by Alexander Graham Bell, it transformed communication and became a cornerstone of the global telecommunications network.
6. **Radio and Television (1895, 1927):** These media technologies changed entertainment, news, and communication across distances.
7. **Computers (Mid-20th Century):** From the invention of the first electronic digital computer to modern laptops and smartphones, computers have changed nearly every aspect of modern life.
8. **Internet (1960s-1980s):** Initially a military and academic project, the internet has transformed communication, entertainment, commerce, and virtually every other aspect of modern life.
9. **World Wide Web (1989):** Invented by Tim Berners-Lee, it brought the internet into homes and businesses around the world, dramatically increasing the internet's reach and utility.
10. **Smartphones (2007):** With the launch of the iPhone and subsequent devices, smartphones have become the central hub for personal communication, entertainment, and work for many people.
11. **Artificial Intelligence (20th-21st Century):** The evolution of AI, machine learning, and related technologies has transformed industries and is anticipated to continue reshaping the future in profound ways.
12. **Genome Sequencing (21st Century):** The ability to map and edit the human genome has had far-reaching implications for biology, medicine, and many other fields.



TOP HISTORY POINTS OF AI



- **1950 - Concept of AI:** Alan Turing proposed the idea of machines that could mimic human intelligence.
- **1956 - Birth of AI:** The term "Artificial Intelligence" was coined by John McCarthy at the Dartmouth Conference.
- **1964 - Early AI Program:** The first AI chatbot, ELIZA, was created at MIT.
- **1974 - First AI Winter:** A decrease in funding and interest due to unmet promises and technological limitations.
- **1980 - Revival and Expert Systems:** The AI field saw a revival with the development of expert systems.
- **1997 - Machine Learning Emerges:** IBM's Deep Blue, using machine learning, defeated the world chess champion, Garry Kasparov.
- **2006 - Data Boom:** The digital era led to an exponential increase in data, laying the foundation for modern AI.
- **2012 - Deep Learning Breakthrough:** A deep learning model won the ImageNet competition, significantly outperforming previous methods in image recognition.
- **2014 - AI in Everyday Life:** Amazon launched Alexa, an AI-powered virtual assistant.
- **2018 - Rise of AI Ethics:** The AI Now Institute was established at NYU, focusing on the social implications of AI.
- **2023 - Regulation Discussions:** White House White Paper, UN proposes regulation for AI to member nations, and many more countries and now, **The New EU legal framework for AI (Global Precedence!).**

QUIZ #1 - TOP 5 COUNTRIES IN AI

- **United States:** The US's priority in AI is broad, reflecting the diversity of its economy. Major focus areas include healthcare (predictive diagnosis, drug discovery), autonomous vehicles, finance (risk assessment, personalized banking), agriculture (precision farming), and defense.
- **China:** Massive push towards AI with a particular focus on areas such as surveillance technology, including facial recognition and predictive policing. Other major focus areas are education (automated grading, personalized learning), healthcare, agriculture, and military applications. In the commercial sector, AI is heavily utilized in e-commerce, social media, and consumer finance.
- **United Kingdom:** The UK's AI focus is quite diverse, but strengths in healthcare (AI for early diagnosis, personalized medicine), fintech (automated trading, risk assessment), and academia (theoretical research in AI).
- **Canada:** Canada's AI strategy focuses heavily on foundational research in AI, and it has made significant contributions to the development of deep learning. Areas of application that are a focus include healthcare (predictive diagnostics), environmental science (climate modeling), and public policy.
- **Germany:** As an industrial powerhouse, Germany's focus in AI is largely on its applications in manufacturing and industrial automation. This includes areas like predictive maintenance, automated quality control, and advanced robotics. Other areas of focus include healthcare, where AI is used for diagnosis and treatment planning, and automotive, where Germany is working on developing AI for autonomous vehicles.



QUIZ #2 - TOP 5 COMPANIES IN USA USING AI

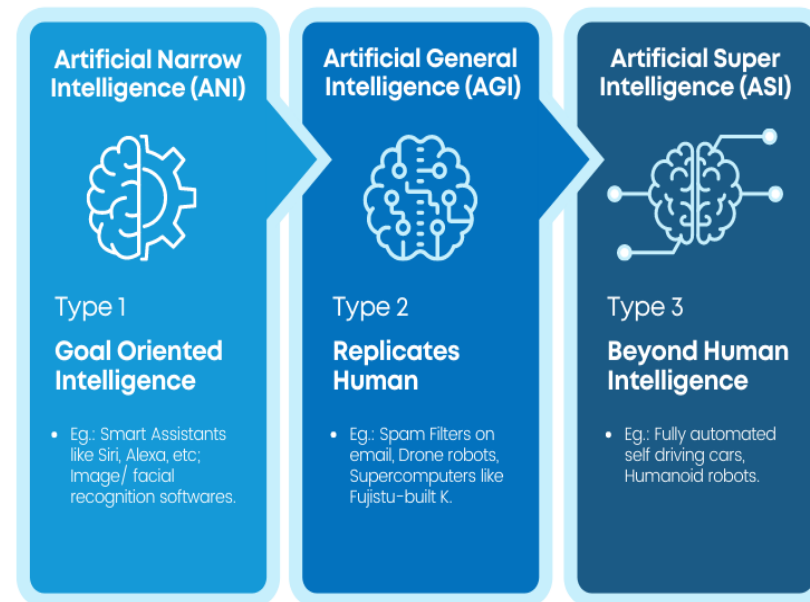
- 1. Google:** Uses AI in its search engine algorithms, digital advertising systems, and personalized user experiences, driving higher ad engagement and improved search functionality.
- 2. Microsoft:** Implements AI in its cloud platform (Azure) to offer enhanced data analytics, business insights, and automation services to its customers.
- 3. IBM:** Through Watson, IBM offers AI solutions for process automation, decision optimization, and data insights across various sectors like healthcare, finance, and more.
- 4. OpenAI:** Research-focused entity generating advanced AI models, such as GPT-3, which are licensed to businesses to improve their operations, especially in customer interaction and language understanding.
- 5. Amazon:** Uses AI in its recommendation systems, supply chain optimization, and cloud services (AWS), boosting sales and customer satisfaction.



TYPES OF AI (BASED ABILITY)

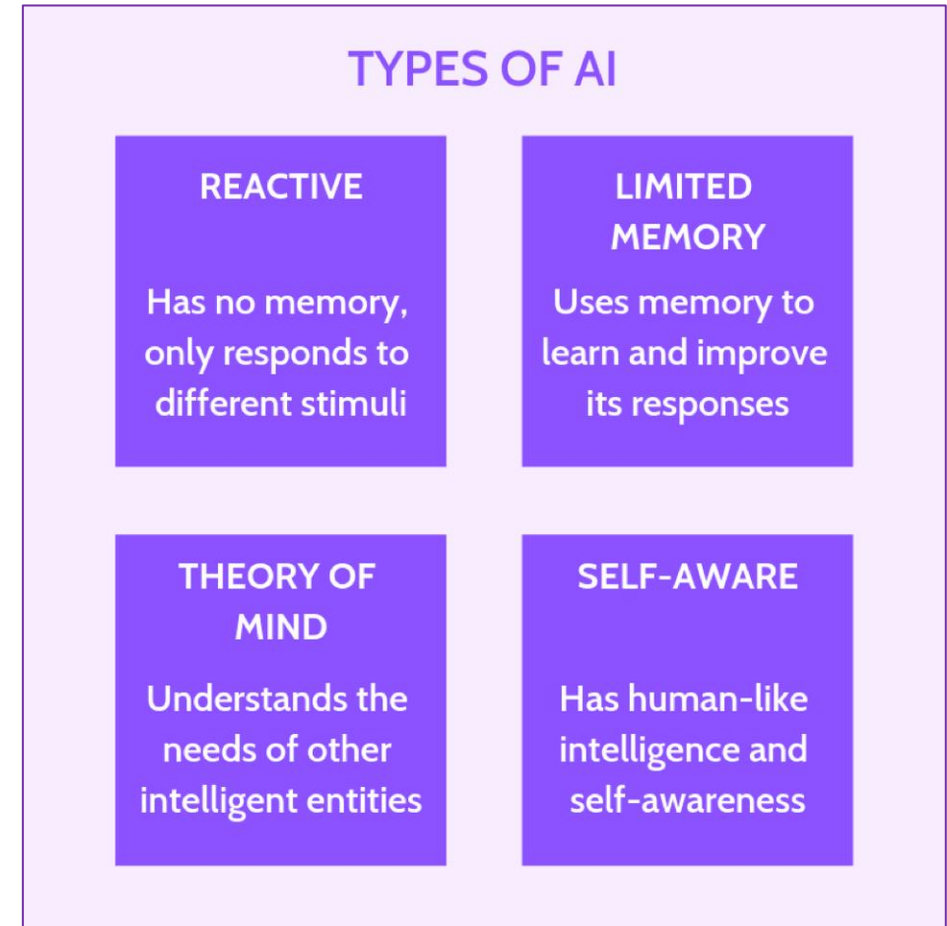
- 1. Narrow AI:** Narrow AI focuses on excelling in a specific task within a limited domain, such as language translation or image recognition. Virtual assistants and recommendation systems are examples of narrow AI.
- 2. General AI:** General AI aims to possess human-level intelligence across a wide range of tasks, enabling thinking, learning, and adaptation to different scenarios. It remains a goal for future development.
- 3. Superintelligence:** This hypothetical form of AI surpasses human intelligence in every aspect, far exceeding human cognitive abilities. Superintelligence is currently speculative and often portrayed in science fiction.

3 Types of Artificial Intelligence



TYPES OF AI (BASED FUNCTIONALITY)

- 1. Reactive Machines:** These AI systems react based on pre-defined rules without memory or learning abilities. Examples include self-driving cars or automated systems in factories.
- 2. Limited Memory:** AI systems with limited memory can learn from past experiences to make decisions. Personal assistants like Siri or Alexa fall into this category.
- 3. Theory of Mind:** This type of AI can understand and attribute mental states to others, enabling it to interpret and predict behavior based on beliefs, emotions, and intentions. It has potential for more advanced human-like interactions.
- 4. Self-Awareness:** AI systems with self-awareness have a sense of their own existence and consciousness, though this level of AI is purely speculative and not yet achieved.



QUIZ #3 - INDUSTRIES IN AZ USING AI

- **Aerospace and Defense:** Honeywell Aerospace uses AI for predictive maintenance, improving efficiency, and safety systems.
- **Healthcare and Bioscience:** Botco.ai provides an AI-powered chatbot for healthcare providers, aiding in personalized patient communication.
- **Technology and Innovation:** DataRobot, based in Scottsdale, offers an automated machine learning platform for building, deploying, and maintaining AI solutions.
- **Advanced Manufacturing:** Benchmark Electronics leverages AI for quality control, task automation, and optimizing production.
- **Mining and Mineral Processing:** PICOR uses AI solutions to enhance the efficiency and safety of bulk material handling.



QUIZ #3 - INDUSTRIES IN AZ USING AI

- **Tourism and Hospitality:** Marriott International (with several locations in Arizona) uses AI for personalized marketing, customer service bots, and data analysis to improve guest experiences.
- **Financial Services:** American Express uses AI for fraud detection, personalization, risk management, and customer service automation.
- **Renewable Energy:** First Solar, an American manufacturer of solar panels and a provider of utility-scale PV power plants, uses AI and machine learning for predictive analytics in power plant monitoring and control.
- **Agriculture:** Yuma-based AgriTech Corp developed SoilKit, which uses AI to provide specific fertilizer recommendations based on soil sample analysis.
- **Real Estate and Construction:** Zillow, with offices in Arizona, uses AI in its Zestimate tool to provide highly accurate estimates of home values.



TOP AREAS TO USE AI IN SMALL BUSINESS

❑ Customer Service:

- **Chatfuel (chatfuel.com):** Chatfuel allows businesses to create AI chatbots for Facebook Messenger without any coding. It's free for up to 1,000 monthly active users.
- **Freshdesk (freshdesk.com):** Freshdesk is a customer support tool that includes a ticketing system, automation, and multi-channel customer support. They offer a free plan for a limited number of agents.



❑ Marketing and Sales:

- **HubSpot (hubspot.com):** HubSpot offers a suite of free tools for CRM, marketing, sales, and customer service. Their software helps businesses automate and personalize marketing campaigns.
- **Mailchimp (mailchimp.com):** Mailchimp offers AI-powered, user-friendly email marketing tools, including automation and personalization. Their free plan includes up to 2,000 contacts.



TOP AREAS TO USE AI IN SMALL BUSINESS

❑ Data Analysis and Insights: **(ACTIONABLE INFORMATION !)**

- **Tableau Public (public.tableau.com):** Tableau Public is a free tool that lets you visualize and share data in interactive ways, providing valuable business insights.
- **Google Analytics (analytics.google.com):** This free tool allows businesses to analyze in-depth detail about their website visitors, enabling a better understanding of customer behavior and market trends.



❑ Process Automation:

- **Zapier (zapier.com):** Zapier enables businesses to automate tasks by integrating different applications. Their free plan allows for a limited number of tasks per month.
- **Automate.io (automate.io):** This platform helps small businesses to automate repetitive tasks across various apps. Their free plan includes 300 actions per month.



TOP AREAS TO USE AI IN SMALL BUSINESS

❑ Inventory Management:

- **TradeGecko ([tradegecko.com](https://www.tradegecko.com)):** TradeGecko offers an inventory management software that includes forecasting tools to optimize inventory levels. Their pricing plans are quite reasonable, but they do not offer a free tier.
- **Zoho Inventory ([zoho.com/inventory](https://www.zoho.com/inventory)):** Zoho Inventory is a comprehensive inventory management tool that includes a free tier for small businesses with basic needs.



❑ Financial Management:

- **Wave ([waveapps.com](https://www.waveapps.com)):** Wave provides a free, AI-enhanced financial management tool for small businesses that includes features for invoicing, receipt scanning, and expense tracking.
- **QuickBooks Online ([quickbooks.intuit.com](https://www.quickbooks.intuit.com)):** QuickBooks Online is a comprehensive accounting tool with AI integration. It's not free, but the pricing is affordable for small businesses.



TOP AREAS TO USE AI IN SMALL BUSINESS

❑ Social Media and Online Presence:

- **Buffer (buffer.com):** Buffer is a social media management tool that enables scheduling and publishing of posts across multiple platforms. It offers a free plan with limited features.
- **Hootsuite (hootsuite.com):** Hootsuite also offers a free plan for social media management, with options for scheduling posts, monitoring brand mentions, and analyzing trends.



❑ Cybersecurity:

- **Avast Business (avast.com/en-us/business):** Avast Business offers a variety of cybersecurity solutions, including free antivirus software for small businesses.
- **Cisco Umbrella (umbrella.cisco.com):** Cisco Umbrella provides cloud-delivered network security. Rates are affordable and it offers a free trial.



CASE STUDIES AND VALUE BY USING AI

- **1. Improved Efficiency** AI can automate routine tasks, reducing costs and freeing up time for staff to focus on higher-value work. For instance, a survey by Salesforce found that sales teams that used AI saw a 14.9% reduction in time spent on non-selling activities.
- **2. Enhanced Customer Service** AI-powered chatbots can handle customer inquiries 24/7. For example, Amtrak's chatbot, "Julie," handles over 5 million inquiries per year, resulting in 30% more bookings and 25% more customer inquiries resolved.
- **3. Personalized Marketing** AI can analyze customer data to deliver personalized marketing messages. According to McKinsey, personalized email marketing improves click-through rates by 14% and conversion rates by 10%.



CASE STUDIES AND VALUE BY USING AI

- **4. Better Decision-Making** AI can analyze large datasets to provide insights, helping businesses make informed decisions. For instance, the AI company Stitch Fix uses algorithms to predict fashion trends, resulting in a 50% decrease in excess inventory.
- **5. Enhanced Security** AI can detect and respond to cyber threats more quickly than manual methods. A Capgemini survey found that 69% of organizations believe they can't respond to critical threats without AI.
- **6. Efficient Recruitment** AI can streamline the recruitment process by automating resume screening. According to a study by Ideal, an AI screening tool, recruiters who use AI have seen a 75% reduction in time-to-hire.



10 STEP PATH TO AI SUCCESS

- **1. Identify the Need and Define Goals (SMART !):** Understand your business needs and identify where AI can provide value.
- **2. Conduct Research:** Understand what AI can and cannot do, and stay updated on the latest trends and advancements.
- **3. Seek Expert Advice:** If AI technology is new to your team, consider consulting with an AI expert or hire an AI consultant to understand its impact on your business.



10 STEP PATH TO AI SUCCESS

- **4. Training and Hiring:** Depending on the complexity, you may need to upskill your current employees or hire new ones with specific skills in data science and AI.
- **5. Choose the Right Tools and Platforms:** Depending on your business need, different AI tools might be appropriate. Tools can range from AI-powered CRM systems to automated email marketing platforms.



10 STEP PATH TO AI SUCCESS

- **6. Start with a Pilot Project:** Instead of a full-scale implementation, start with a pilot project that has clear, measurable objectives. This allows you to measure the impact and understand the practical challenges that might arise.
- **7. Measure and Analyze the Outcomes:** Once the pilot project is up and running, track its performance against the set objectives. Make sure you have a good system in place to measure the right metrics.
- **8. Scale Gradually:** If the pilot project is successful, gradually expand the scope of AI implementation. Always keep checking whether the results align with your strategic goals.



- **9. Ensure Ethical Use:** Ensure that your use of AI is ethical and complies with relevant laws and regulations, particularly those related to data privacy.



- **10. Continuous Learning and Improvement:** AI is a rapidly evolving field. Regularly reassess your use of AI and adapt as necessary. Always be open to learning and improving.



LOCAL ORGANIZATIONS COACHING & TRAINING ABOUT AI

1. **Arizona Technology Council:** Provides networking, educational events, and policy advocacy, including resources on AI. Website: aztechcouncil.org.
2. **DataRobot:** Offers an automated machine learning platform and education for businesses to understand AI. Website: datarobot.com.
3. **Arizona Commerce Authority:** Provides resources and events on technology topics, including AI, through their Small Business Services. Website: azcommerce.com.
4. **University of Arizona - Eller College of Management:** Provides courses and resources related to AI and data analytics. Website: eller.arizona.edu.
5. **Greater Phoenix Economic Council:** Works with businesses on tech and innovation strategy, potentially including AI. Website: gpec.org.
6. **Galvanize Phoenix:** Offers tech courses, including in data science and AI, useful for small businesses. Website: galvanize.com/phoenix/campus
7. **SCORE:** Business Mentoring and education across AZ/USA. 10,000 mentors in 300 chapters. Website: <https://www.score.org>.



TOP FREE AI COURSES



- 1. AI For Everyone by Andrew Ng (coursera.org/learn/ai-for-everyone):** This course provides a comprehensive, non-technical overview of AI concepts, AI applications in business, and how AI is transforming industries and society.
- 2. AI Foundations for Everyone by IBM (coursera.org/learn/ai-foundations-for-everyone):** This course aims to help learners understand AI terminology, applications, and IBM's role in AI. While it covers some technical topics, it is designed to be accessible for non-technical learners.
- 3. Artificial Intelligence in Business – Opportunities and Challenges (open.hpi.de/courses/aibusiness2019):** This course focuses on the application of AI in business, including potential challenges and opportunities. It's offered by Hasso Plattner Institute, a part of the University of Potsdam, Germany.
- 4. Artificial Intelligence: Business Strategies and Applications (berkeley.edu/academics/course-program/artificial_intelligence_online):** This is a free course provided by the University of California, Berkeley. It focuses on strategies for implementing AI in business and explores real-world applications.
- 5. AI Business School by Microsoft (aischool.microsoft.com/business):** Microsoft's AI Business School provides free learning paths that focus on AI strategy, culture, responsibility, and technology. The course material aims to empower business leaders to lead with confidence in the age of AI.

SOCIAL MEDIA AI SITES

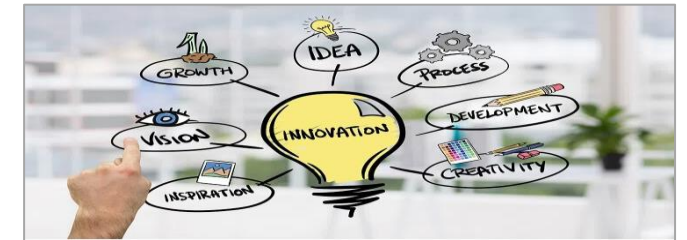
- LinkedIn:
 - Microsoft AI: <https://www.linkedin.com/showcase/microsoft-ai/>
 - OpenAI: <https://www.linkedin.com/company/openai/>
 - DeepMind: <https://www.linkedin.com/company/deepmind/>
- Twitter:
 - OpenAI: <https://twitter.com/OpenAI>
 - DeepMind: <https://twitter.com/DeepMind>
 - Google AI: <https://twitter.com/GoogleAI>
- Facebook:
 - OpenAI: <https://www.facebook.com/openai/>
 - DeepMind: <https://www.facebook.com/DeepMindAI/>
 - Facebook AI: <https://www.facebook.com/facebookai/>



TOP TRADE LITERATURE

1. **Entrepreneur:** This magazine covers a wide range of topics related to entrepreneurship and small business. They often feature articles on AI adoption, AI-powered tools for businesses, and AI trends impacting small enterprises. Website: www.entrepreneur.com
2. **Small Business Trends:** Small Business Trends offers news, insights, and resources for small business owners. While not solely dedicated to AI, they regularly cover AI-related topics and discuss its impact on small businesses. Website: www.smallbiztrends.com
3. **Inc. Magazine:** Inc. Magazine provides business advice and inspiration for entrepreneurs and small business owners. They frequently cover AI advancements and how they can be leveraged by small businesses. Website: www.inc.com
4. **AI Business:** This publication focuses specifically on AI-related topics, including applications, trends, and impact across various industries. While not exclusively targeted at small businesses, their articles can provide valuable insights into AI for enterprises of all sizes. Website: www.ai.business
5. **AI Trends:** AI Trends is a leading publication that covers AI technology, trends, and their business implications. While it caters to a broader audience, they often discuss AI adoption and its relevance to small businesses. Website: www.aitrends.com
6. **Chatbots Magazine:** Chatbots Magazine focuses on the applications and advancements in chatbot technology, which often intersects with AI. Chatbots can be useful for small businesses, and this publication provides insights and practical use cases. Website: chatbotsmagazine.com

1. AI can drive business transformation: Help businesses unlock new opportunities, improve efficiency, and gain a competitive edge.
2. Start with foundational knowledge: Learn the fundamentals. This knowledge forms the basis for understanding how AI can be applied in your business.
3. Focus on practical applications: Projects relevant to your business. Practical application help you understand how can address specific challenges and deliver tangible solutions & benefits.
4. Ethical considerations are crucial: Consider the impact on society, privacy, bias, and fairness. Responsible and ethical practices are essential for building trust and mitigating potential risks.
5. Continual learning is essential: Stay updated. Continuous learning ensures you can adapt to new techniques, technologies, and emerging opportunities.



QUESTIONS



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