



Implementing AI-enabled chatbots for customer engagement – In collaboration with NASA GRC

NOVEMBER 18-19, 2024

Agenda

SaND)AI Global at a Glance	9:30 – 9:40
Section 1: What is AI?	9:40 – 10:00
Section 2: Learn: Intro to Chatbots	10:00 – 10:30
Break	10:30 – 10:45
Section 3: Lab: Chatbot Example: Build and Train	10:45 – 11:30
Section 3: Lab: Chatbot Example: Deploy using documents	11:30 – 12:00
Section 3: Lab: Chatbot Example: Deploy using URLs	12:00 – 12:30
Wrap-up	12:30 – 12:45

SaNDAI at a Glance!

SaNDAI Global, is an innovative data and business intelligence firm, transforms sectors with cutting-edge data services. **We innovate and don't replicate.**

Our elite team of experts, each with deep industry insight, certifications, and a zeal for innovation, serves **businesses, government agencies, nonprofits, and healthcare organizations.**

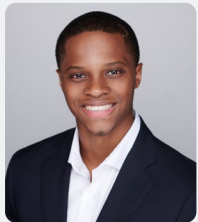
PRESENTERS



JEREMY WILLIAMS, SR.

Chief Executive Officer

BS – Mechanical Engineering - Florida A&M University
MBA – Finance - University of Virginia Darden



JEREMY WILLIAMS, JR.

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BS – Business Administration and Data Analytics - George Mason University



WALAA JASIM

Project Manager - ASRC

BA – Spanish - University of Baghdad
MBA - Business Planning – University of Baghdad



HIBA KHAN

Marquee Tech - Owner

MbBS (International MD) – Dubai Medical College
MSc – Medical Nutrition - Stanford



CORE COMPETENCIES

 Digital transformation

 Data analytics/
Business intelligence

 Artificial Intelligence/
Generative AI

 Project Management

 Training and Development

OUR DIVISIONS



SaNDAI Global: Enhancing data analytics and AI through subscription-based services.



SaNDAI Government Sphere: Supporting government leaders with scalable data management and analytics solutions.

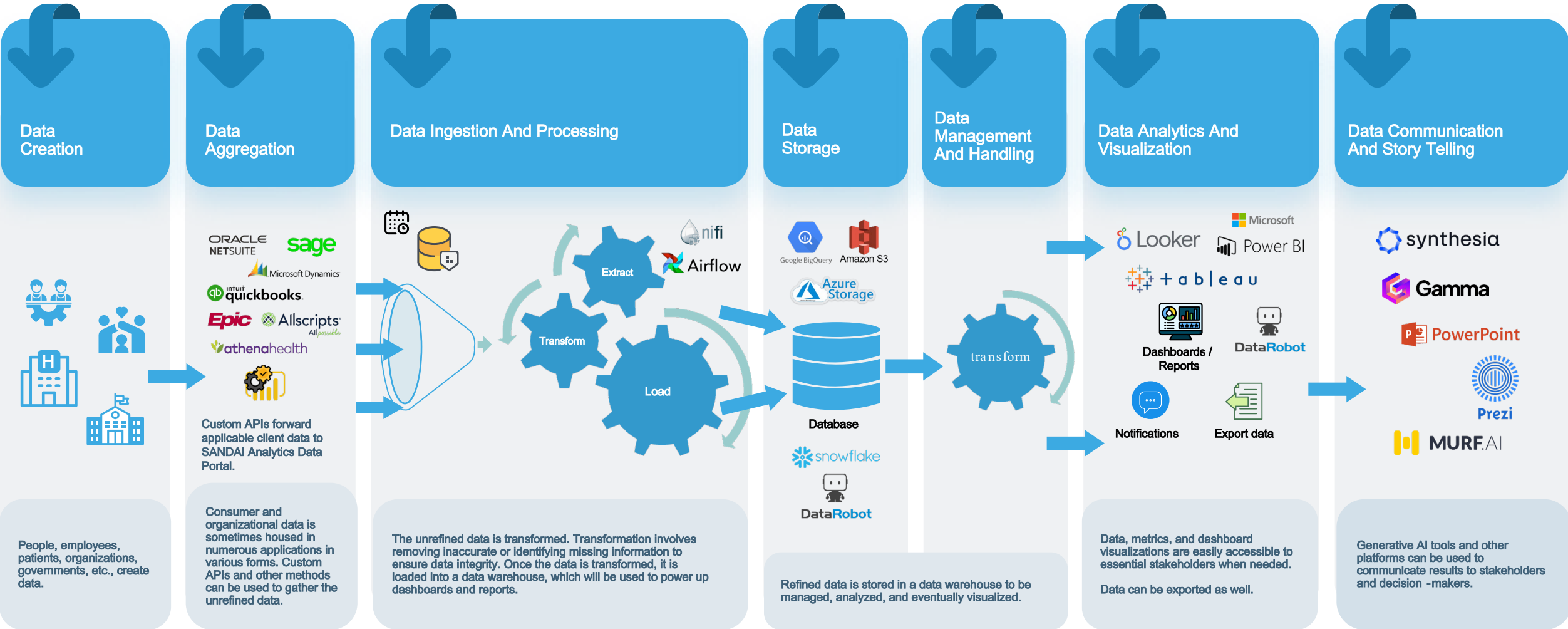


SaNDAI Cares: Empowering global nonprofit leaders through data-driven insights..



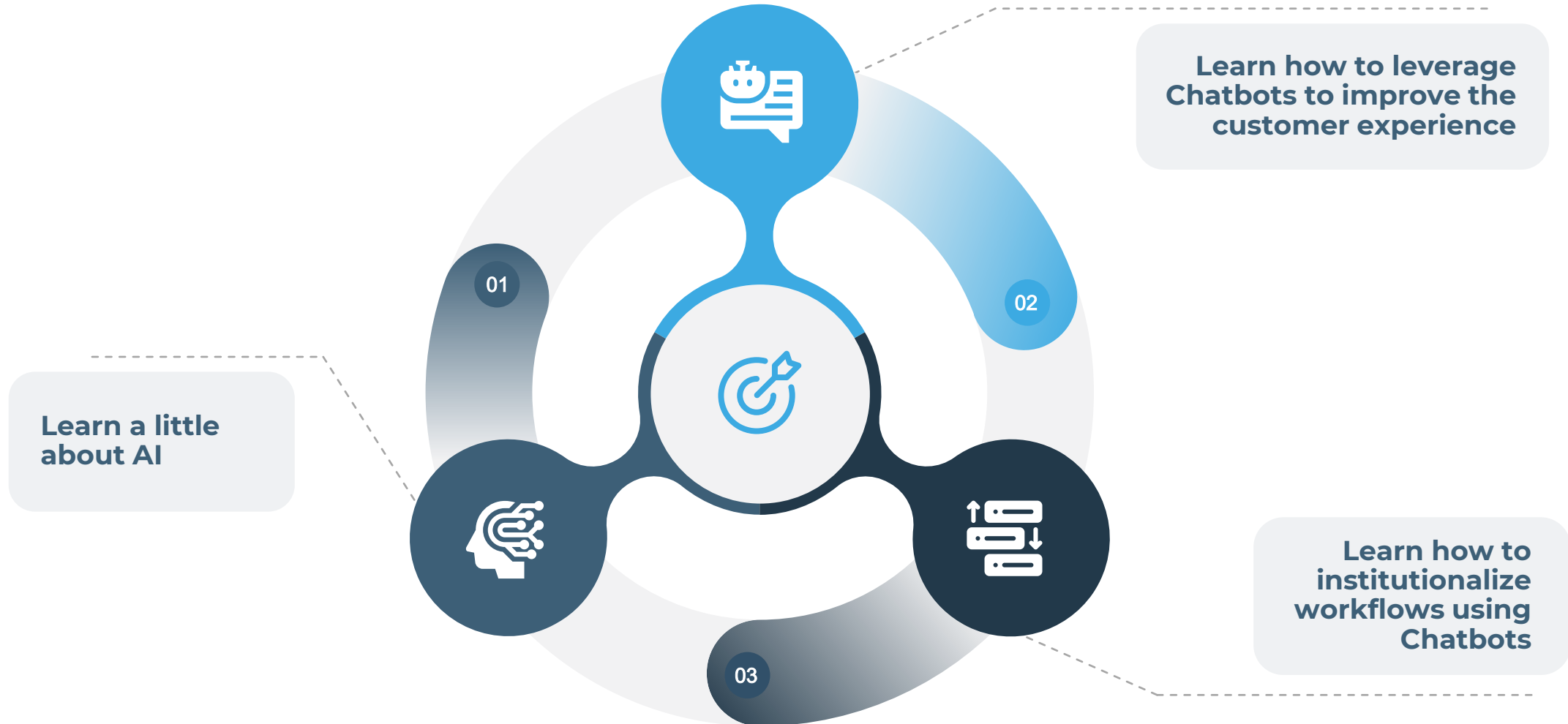
SaNDAI Learning Center: Upskilling in data analytics and generative AI for employees, the underrepresented, and students..

We Guide You From Data Creation To Data Communication



➡ WE TAKE PRIDE IN TRANSFORMING DATA INTO ACCESSIBLE FORMATS

Three take-aways from this training





Section 1: What is AI?

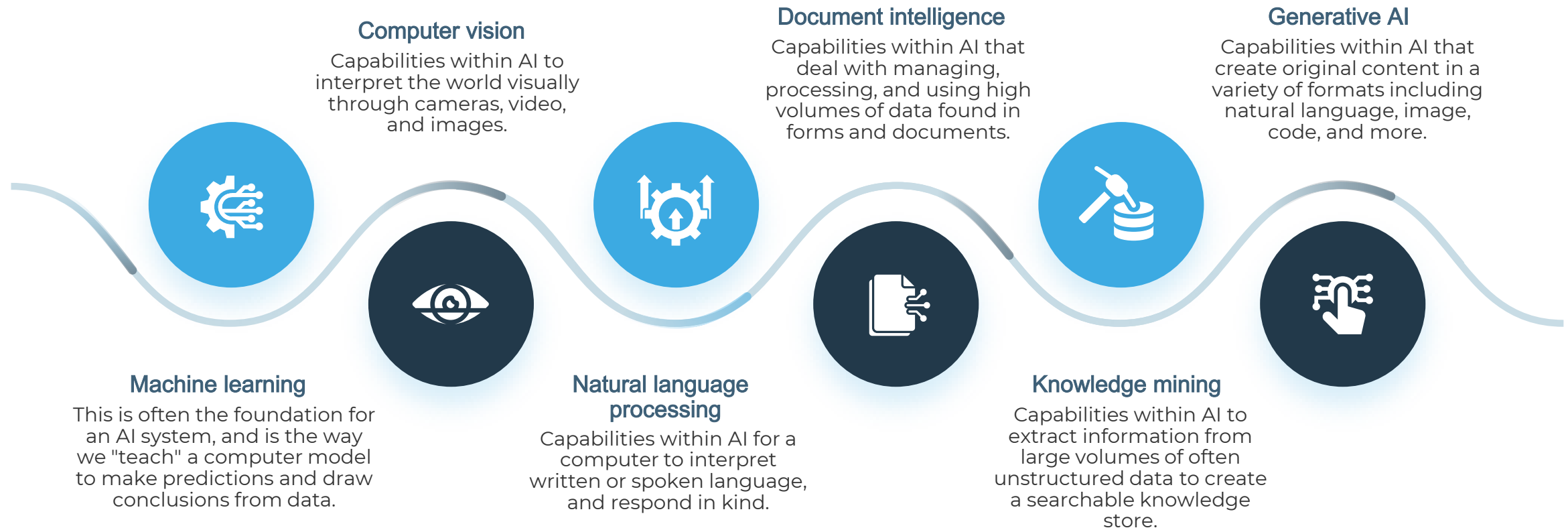


**AI is changing
nearly every industry**
and will impact society in ways we
are just beginning to understand

What is AI?



AI enables us to build amazing software that can improve health care, enable people to overcome physical disadvantages, empower smart infrastructure, create incredible entertainment experiences, and even save the planet!



Understanding Machine Learning

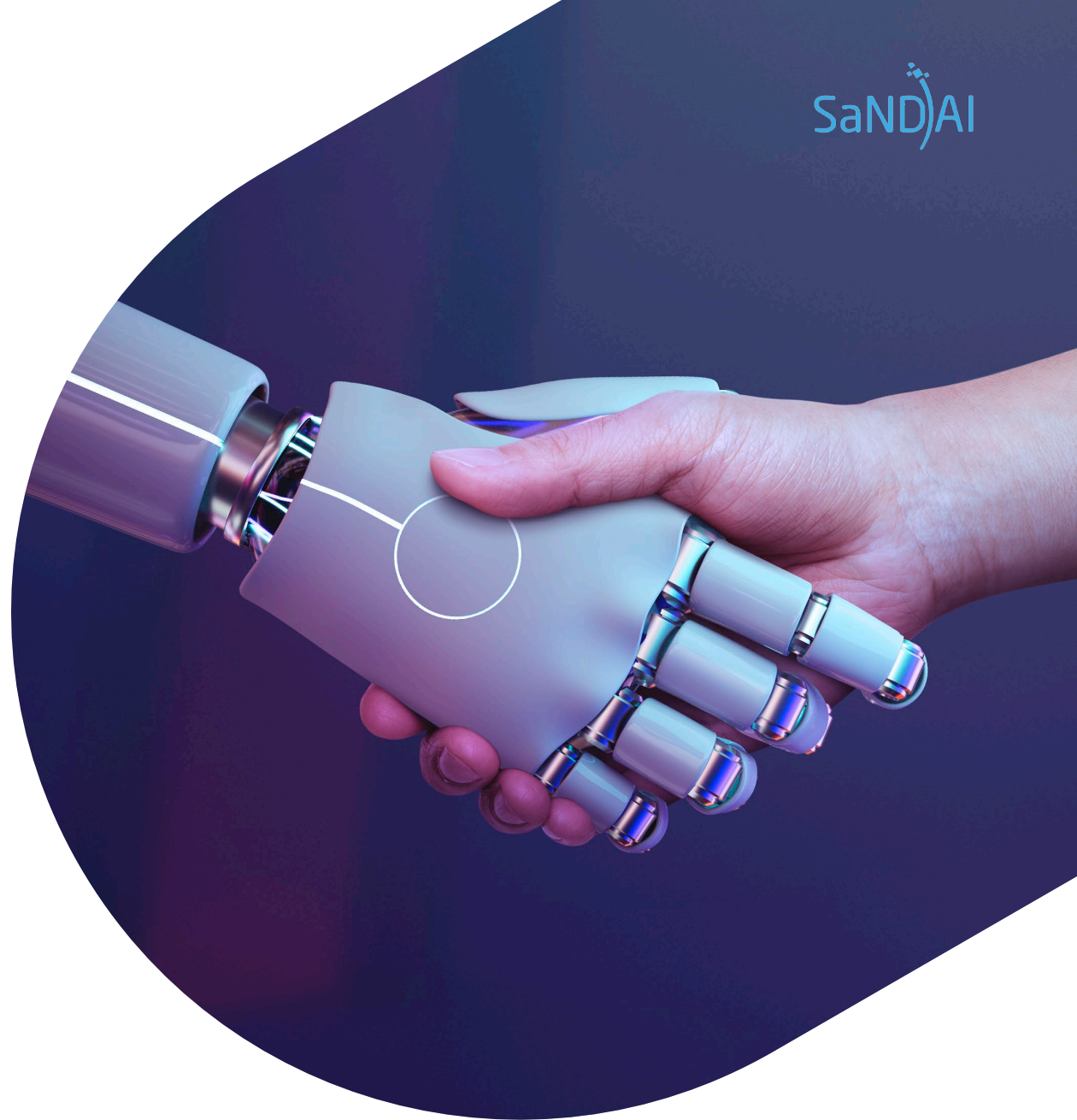


Machine Learning is the foundation for most AI solutions

In today's world, we create huge volumes of data as we go about our everyday lives. From the text messages, emails, and social media posts we send to the photographs and videos we take on our phones, we generate massive amounts of information. More data still is created by millions of sensors in our homes, cars, cities, public transport infrastructure, and factories.



Machine learning models try to capture the relationship between data.



Understanding Computer Vision



Computer Vision is an area of AI that deals with visual processing.



Most computer vision solutions are based on machine learning models that can be applied to visual input from cameras, videos, or images.



Object detection

Object detection machine learning models are trained to classify individual objects within an image, and identify their location with a bounding box.

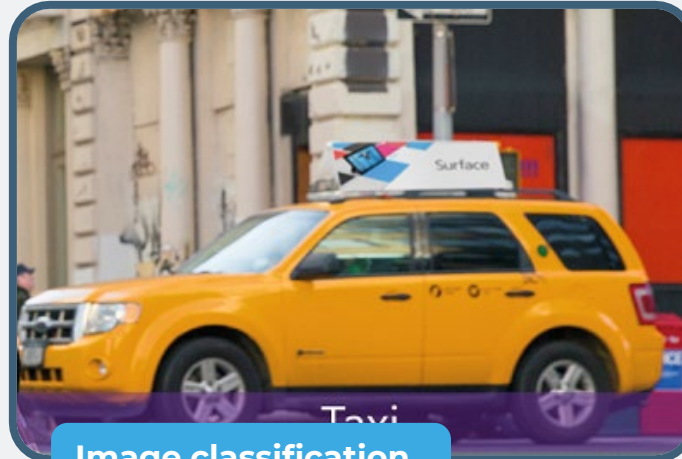


Image classification

Image classification involves training a machine learning model to classify images based on their contents.



Face detection, analysis, and recognition

Face detection is a specialized form of object detection that locates human faces in an image.

Understanding Natural Language Processing

Natural language processing (NLP) is the area of AI that deals with creating software that understands written and spoken language.



NLP enables you to create software that can

1. Analyze and interpret text in documents, email messages, and other sources.
2. Interpret spoken language, and synthesize speech responses.
3. Automatically translate spoken or written phrases between languages.
4. Interpret commands and determine appropriate actions.



Understanding Document Intelligence and Knowledge Mining



Document Intelligence is the area of AI that deals with managing, processing, and using high volumes of a variety of data found in forms and documents. Document intelligence enables you to create software that can automate processing for contracts, health documents, financial forms and more.



Knowledge mining is the term used to describe solutions that involve extracting information from large volumes of often unstructured data to create a searchable knowledge store.



Knowledge mining is the foundation of Chatbots!

Understanding Generative AI



Generative AI describes a category of capabilities within AI that create original content. People typically interact with generative AI that has been built into chat applications.



Generative AI applications take in natural language input, and return appropriate responses in a variety of formats including natural language, image, code, and audio.



**Generative
AI is fun!**



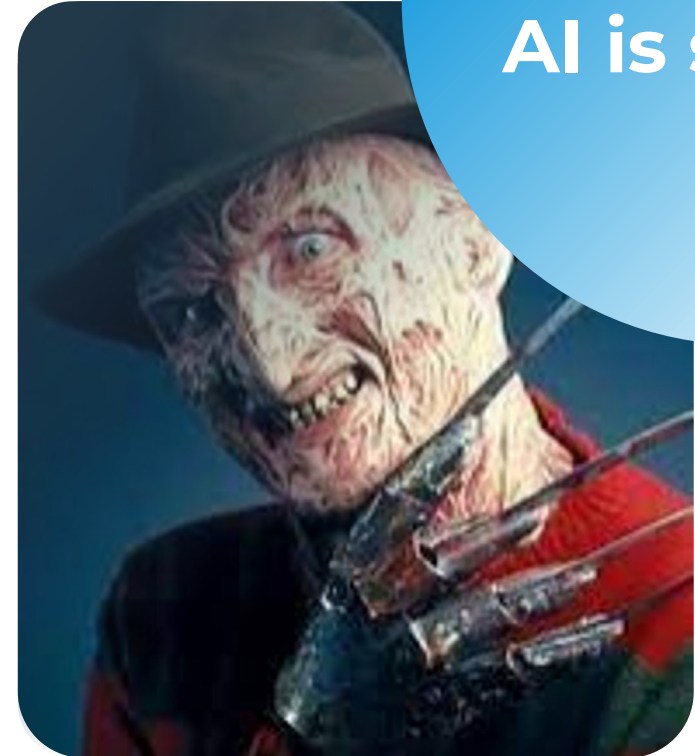
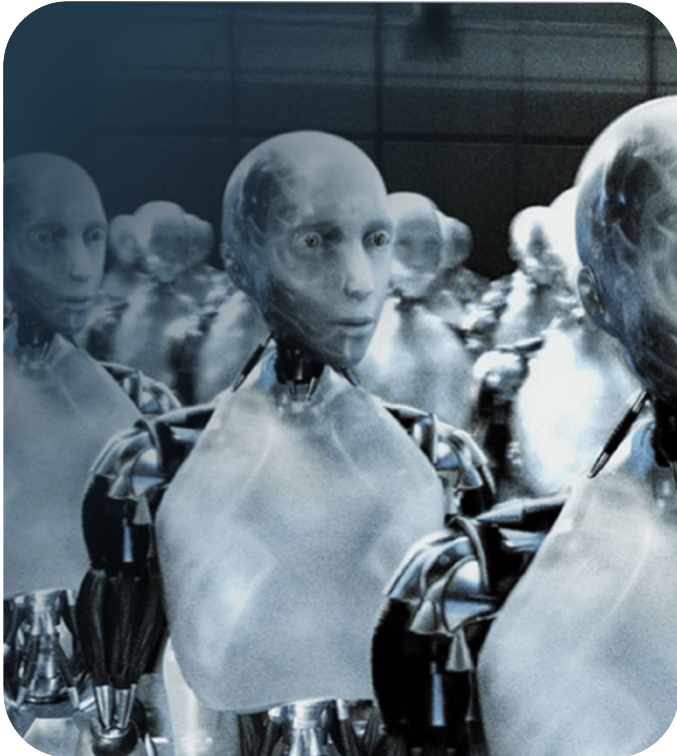
Unfortunately, there are too many generative AI technologies to learn

AI Presents Challenges

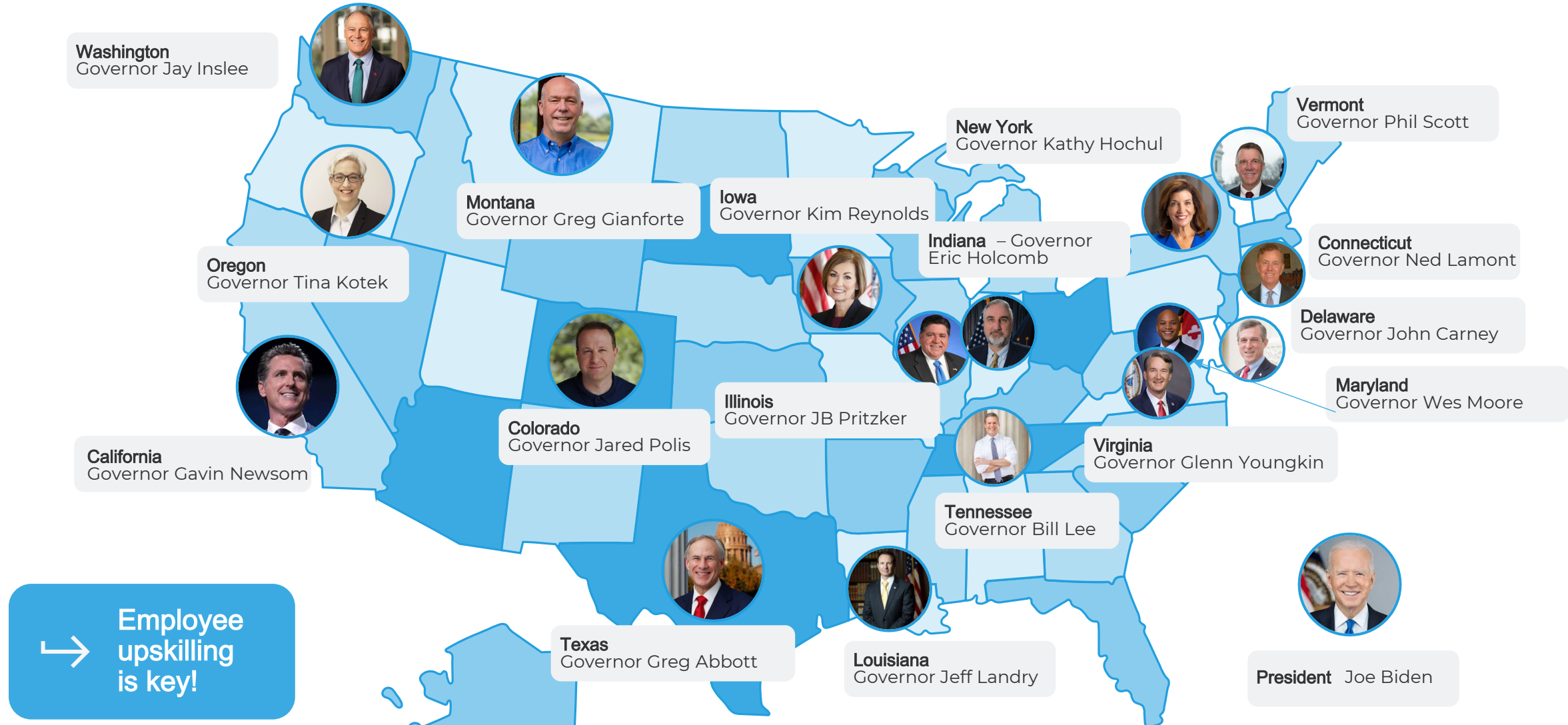


Artificial Intelligence is a powerful tool that can be used to greatly benefit the world. However, like any tool, it must be used responsibly.

To many,
AI is scary!



The president and 45 governors have enacted AI legislation; most with an emphasis on worker protection



Newsom Administration Releases GenAI Report

Published: Nov 21, 2023

WHAT TO KNOW: Following Governor Newsom’s September 2023 Executive Order to prepare California for the progress of Generative Artificial Intelligence, the administration releases a report examining the most beneficial uses and potential harms of GenAI in state government.

SACRAMENTO — Today, the Newsom Administration released a [report](#) outlining the state’s opportunities to use Generative Artificial Intelligence (GenAI) while highlighting potential harms. This is the first of several expected reports and deliverables required by the [Executive Order](#) the Governor issued two months ago.

WHAT GOVERNOR NEWSOM SAID: “This is an important first step in our efforts to fully understand the scope of GenAI and the state’s role in deploying it. We’re taking a nuanced, measured approach – understanding the risks this transformative technology poses while examining how to leverage its benefits.”

WHAT’S IN THE REPORT:

880K+
state and
local
employees

Recent News

- [Governor Newsom Announces Appointments 1.19.24](#)
- [Governor Newsom Issues 2023 Social Innovation Impact Report](#)
- [Governor Newsom Announces](#)

 Search

where GenAI can improve the efficiency, effectiveness, accessibility, and equity of government operations.

- **Beneficial Uses of GenAI Report:** Direct state agencies and departments to develop a report examining the most significant and beneficial uses of GenAI in the state. The report will also explain the potential harms and risks for communities, government, and state government workers.
- **Deployment and Analysis Framework:** Develop guidelines for agencies and departments to analyze the impact that adopting GenAI tools may have on vulnerable communities. The state will establish the infrastructure needed to conduct pilots of GenAI projects, including California Department of Technology approved environments or “sandboxes” to test such projects.
- **State Employee Training:** To support California’s state government workforce and prepare for the next generation of skills needed to thrive in the GenAI economy, agencies will provide trainings for state government workers to use state-approved GenAI to achieve equitable outcomes, and will establish criteria to evaluate the impact of GenAI to the state government workforce.
- **GenAI Partnership and Symposium:** Establish a formal partnership with the University of California, Berkeley and Stanford University to consider and evaluate the impacts of GenAI on California and what efforts the state should undertake to advance its leadership in this industry. The state and the institutions will develop and host a joint summit in 2024 to engage in meaningful discussions about the impacts of GenAI on California and its workforce.

- [June 2023](#)
- [May 2023](#)
- [April 2023](#)
- [March 2023](#)
- [February 2023](#)
- [January 2023](#)
- [December 2022](#)
- [November 2022](#)
- [October 2022](#)
- [September 2022](#)
- [August 2022](#)
- [July 2022](#)
- [June 2022](#)



OCTOBER 30, 2023

FACT SHEET: President Biden Issues Executive Order on Safe, Secure, and Trustworthy Artificial Intelligence

BRIEFING ROOM > STATEMENTS AND RELEASES

Today, President Biden is issuing a landmark Executive Order to ensure that America leads the way in seizing the promise and managing the risks of artificial intelligence (AI). The Executive Order establishes new standards for AI safety and security, protects Americans' privacy, advances



President Joe Biden



President Donald Trump

2.9M+ Federal employees



THE WHITE HOUSE



technical positions to facilitate a... use of current pay incentives;

(v) within 180 days of the date of this order, establish guidance and policy on skills-based, Federal Government-wide hiring of AI, data, and technology talent in order to increase access to those with nontraditional academic backgrounds to Federal AI, data, and technology roles;

(vi) within 180 days of the date of this order, establish an interagency working group, staffed with both human-resources professionals and recruiting technical experts, to facilitate Federal Government-wide hiring of people with AI and other technical skills;

(vii) within 180 days of the date of this order, review existing Executive Core Qualifications (ECQs) for Senior Executive Service (SES) positions informed by data and AI literacy competencies and, within 365 days of the date of this order, implement new ECQs as appropriate in the SES assessment process;

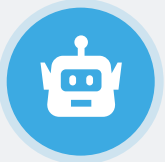
(viii) within 180 days of the date of this order, complete a review of competencies for civil engineers (GS-0810 series) and, if applicable, other



Section 2: Intro to Chatbots

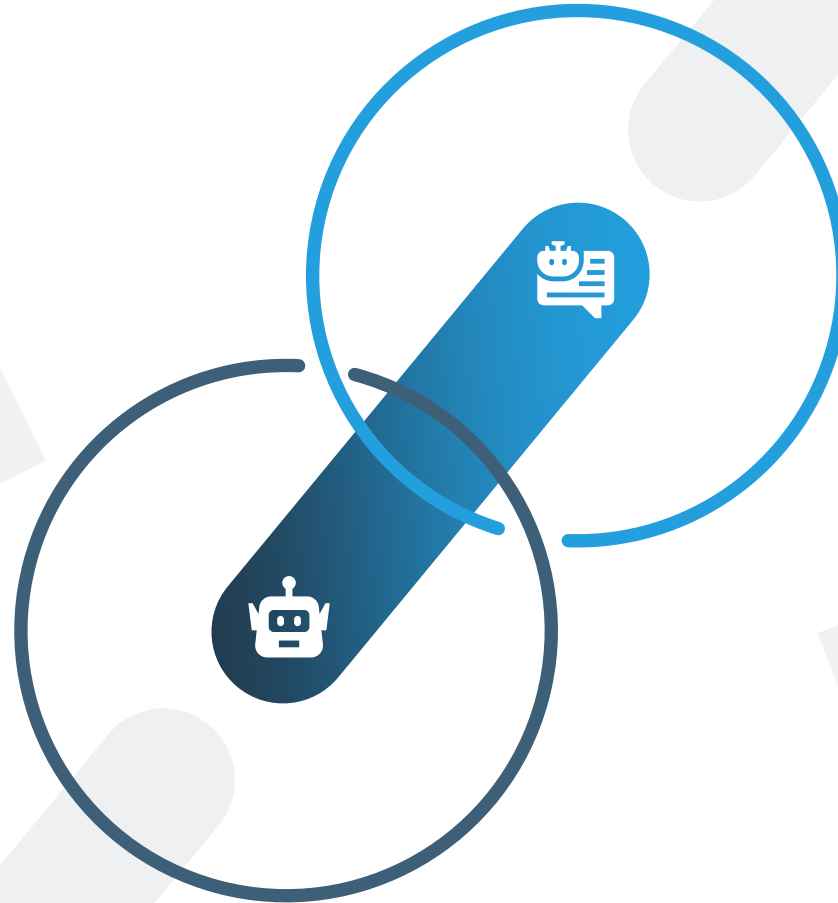
Did you know that **80% of everyday customer** queries could get a quick response without a human resource engagement?

Imagine this common scenario



You are navigating a website. There is an icon discreetly nestled at the bottom of your screen. This seemingly hidden symbol plays a vital role—it's your dependable chatbot.

Always on standby, it welcomes you with a warm and inviting question: "How can I assist you today?" It elevates your online experience by providing instant and valuable assistance whenever you require it.



Chatbots function as virtual customer assistants, automating and streamlining customer interactions across various messaging channels.

Its primary purpose is to empower businesses to serve their customers efficiently, even when human agents are away.



We all want instant gratification, quick solutions, and problem -solving mechanisms. Irrespective of the nature of the business, consumers expect fast turnaround times.

The Age Of Chatbots



Phone calls and emails are integral parts of customer support. However, on the flip side, they can be time -consuming and result in delays in response and resolution. Here is where chatbots come in.

Chatbots are a reasonable solution for businesses or organizations wishing to scale or improve customer service without increasing costs and employee headcount.

The majority of issues on live chat get resolved within **42 seconds**
(LocaliQ)



64% of customer service agents who utilize AI chatbots can spend most of their time -solving complex cases.
(Salesforce)



Annually, **companies lose** a significant amount, ranging from **\$75 billion to \$1.6 trillion**, due to inadequate customer support.
(Midlands Technical College)



134,565,694 chats were held by ChatBot in 2023
(LiveChat)



81% of customers prefer using self-service options before contacting a customer service representative.
(HubSpot)



Businesses that offer more engaging and high-quality chatbot experiences witness customer **70% more** interactions and responses
(LocaliQ)



Chatbots can benefit customers in numerous ways



24/7 Accessibility

Chatbots provide round-the-clock service, ensuring customers can get support or answers to their questions at any time, even outside regular business hours..



Instant Responses

With chatbots, customers don't have to wait for a human representative, as they can receive immediate assistance for common queries or concerns..



Personalized Recommendations

Chatbots can analyze customer data and preferences to offer tailored product or service recommendations, enhancing the shopping or user experience.



Efficient Problem Resolution

Chatbots handle simple issues or FAQs efficiently, saving customers time and directing more complex problems to human agents when needed.



Cost Savings

By automating routine tasks, chatbots reduce costs for businesses, which can translate into better pricing or services for customers..



Multilingual Support

Chatbots can communicate in multiple languages, helping businesses serve a global customer base and breaking down language barriers.



Convenient Self-Service Options

Customers can use chatbots to perform tasks like checking order statuses, booking appointments, or updating account information without needing human assistance.



Improved Accessibility

Chatbots make it easier for customers with disabilities to access information or services, especially when integrated with voice recognition and text-to-speech technologies.



Consistent Support Quality

Unlike human agents who may vary in knowledge or performance, chatbots provide consistent answers and service across interactions.



Proactive Engagement

Chatbots can initiate conversations to provide reminders, updates, or special offers, enhancing the customer experience without being intrusive.

ChatBots can leverage multiple data sources



Data collection holds significant importance in the development of a successful chatbot. It will allow your chatbots to function properly and ensure that you add all the relevant preferences and interests of the users.

**Your chatbot
can only be as
good as your
data and how
well you train it**



DOCUMENTS



SPREADSHEETS



WEBSITES



DATABASES

Eight habits for a highly effective chatbot

Habit #1

Start with a good foundation and great data

Habit #2

Identify your desired outcomes

Habit #3

Start small, aim big—but most importantly, start!

Habit #4

Personalize the greeting experience

Habit #5

Create short, actionable interactions

Habit #6

Rely on fallbacks

Habit #7

Respect boundaries while maintaining a consistent tone

Habit #8

Measure and iterate



Section 3: Chatbot Example

Enter these details to
access your chatbot




<https://app.wonderchat.io>

Email: Jeremy6457@gmail.com

Password: ilovetowin24/7



Contact Us!

-  (202) 754 -5959
-  jeremy@sandaiglobal.com
-  <https://sandaiglobal.net/>



**“Innovation
distinguishes
between a leader
and a follower”
- Steve Jobs.**

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