NASA Glenn Research Center
Foundations and Applications of Gen AI
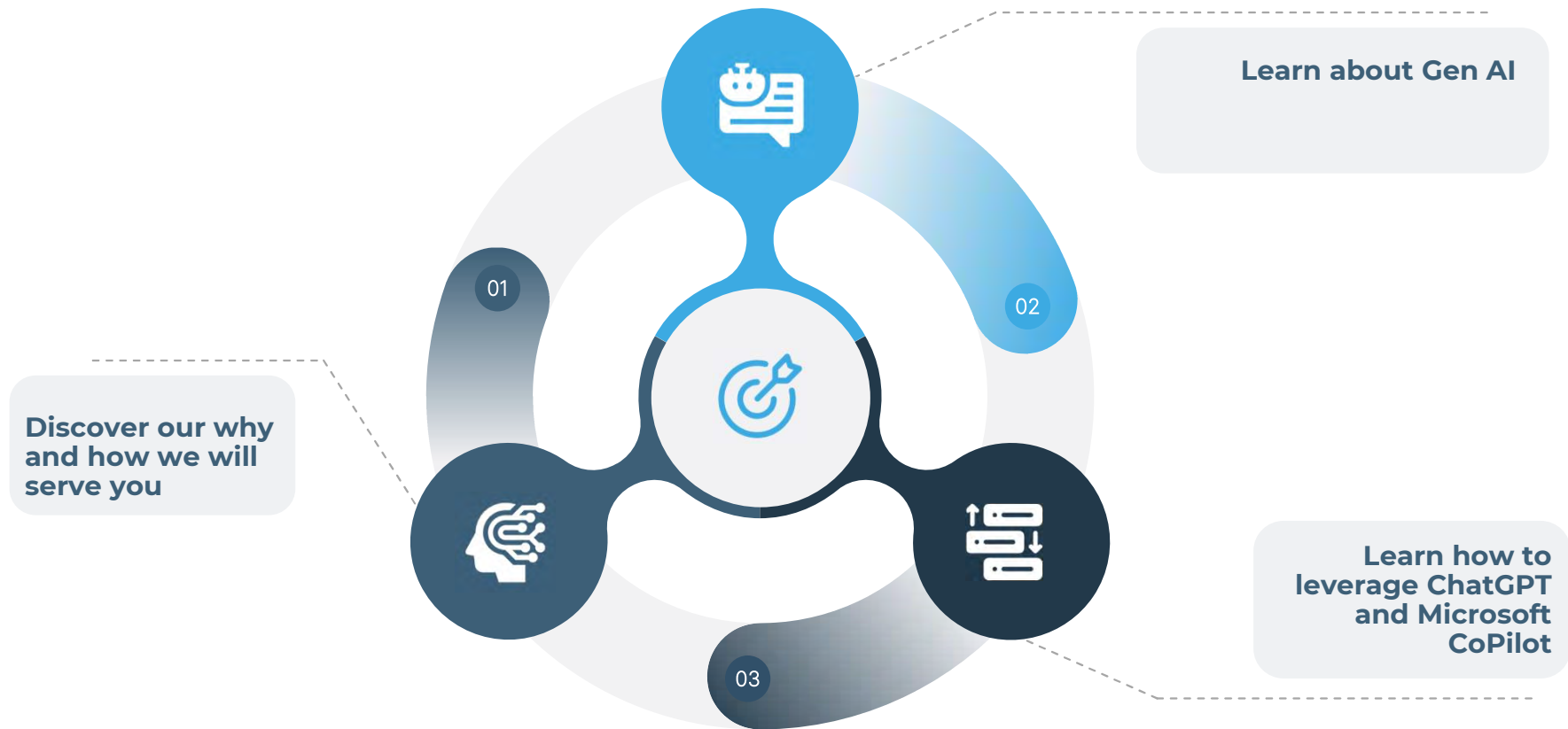
Module 1 - - Day 1
OCTOBER 22-23, 2024

Agenda

SaNDAI Global at a Glance	9:00 – 9:25
Let's Talk About Gen AI	9:25 – 9:45
Let's Talk About DataCamp	9:45 – 10:05
Break I	10:05 – 10:20
What is ChatGPT?	10:20 – 11:35
Break II	11:35 – 11:50
What is CoPilot?	11:50 – 12:35
Day-1 Wrap-up	12:35 – 1:00

Three take-aways from this training

SaNDAI

Learn about Gen AI

Discover our why and how we will serve you

01

02

03

Learn how to leverage ChatGPT and Microsoft CoPilot

3

Our Why and Service to you

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.**

PARTNERSHIP CONTACTS

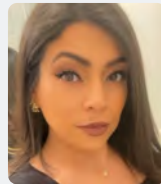### JEREMY WILLIAMS, SR.
Chief Executive Officer

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

JEREMY WILLIAMS, JR.
Director of Operations

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

SaNDAI

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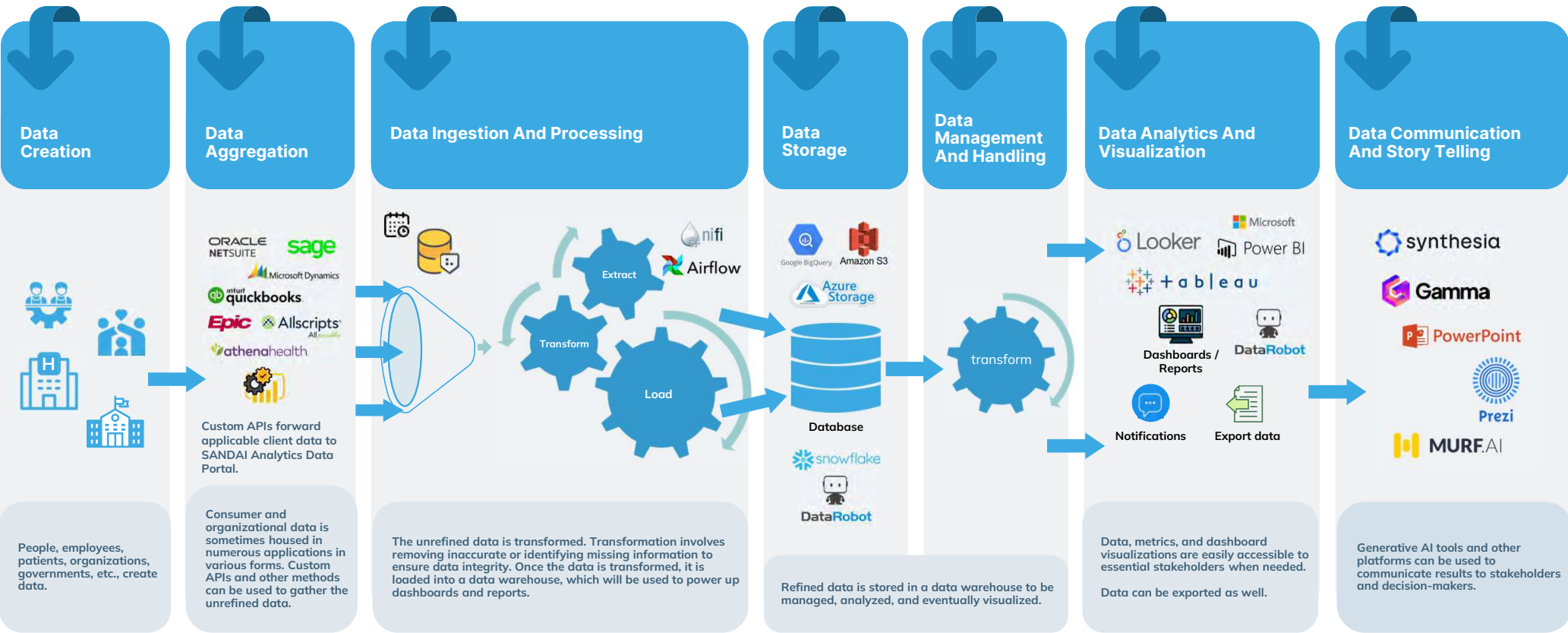
SaNDAI Cares: Empowering global nonprofit leaders through data-driven insights..

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

We Guide Clients From Data Creation To Data Communication

Data Creation

People, employees, patients, organizations, governments, etc., create data.

Data Aggregation

ORACLE NETSUITE · sage · Microsoft Dynamics · intuit quickbooks · Epic · Allscripts · athenahealth

Custom APIs forward applicable client data to SANDAI Analytics Data Portal.

Consumer and organizational data is sometimes housed in numerous applications in various forms. Custom APIs and other methods can be used to gather the unrefined data.

Data Ingestion And Processing

Extract · nifi · Airflow · Transform · Load

The unrefined data is transformed. Transformation involves removing inaccurate or identifying missing information to ensure data integrity. Once the data is transformed, it is loaded into a data warehouse, which will be used to power up dashboards and reports.

Data Storage

Google BigQuery · Amazon S3 · Azure Storage · Database · snowflake · DataRobot

Refined data is stored in a data warehouse to be managed, analyzed, and eventually visualized.

Data Management And Handling

transform

Data Analytics And Visualization

Looker · Microsoft Power BI · tableau · Dashboards / Reports · DataRobot · Notifications · Export data

Data, metrics, and dashboard visualizations are easily accessible to essential stakeholders when needed.

Data can be exported as well.

Data Communication And Story Telling

synthesia · Gamma · PowerPoint · Prezi · MURF.AI

Generative AI tools and other platforms can be used to communicate results to stakeholders and decision-makers.

WE TAKE PRIDE IN TRANSFORMING DATA INTO ACCESSIBLE FORMATS

Our Training Use Cases are expansive.

Custom Generative AI Training Programs

SaNDAI can collaborate with ASRC Federal to design and deliver workshops, webinars, or micro-tutorials covering over 70 generative AI tools.

Custom Data Analytics Training Programs

SaNDAI can develop interactive micro-tutorials that enhance employee data analytics skills and allow them to stay up-to-date with the latest trends and techniques. We offer training, coaching, and micro-tutorials for Power BI, Tableau, Excel, and Google Sheets.

Corporate Data Tutorials for Executives

SaNDAI specializes in creating tailored micro-tutorials that communicate division-specific and consolidated data to share unique insights and perspectives with corporate executives.

USE CASES

Custom Tutorials and Training Programs

SaNDAI can develop custom courses for AWS, Azure, and other applications like ServiceNow.

Custom AI Ethics and Compliance Training Programs

SaNDAI can provide customized training modules on AI ethics, covering topics such as bias, privacy, transparency, and responsible AI practices. Employees can learn how to navigate ethical challenges when implementing AI solutions.

→ **All SaNDAI Global Training Programs are flexible and employee-friendly. All Programs include coaching services too.**

Our value proposition to you!

SaND AI

Three in-person Training Modules

First module, we determine the content

Content for subsequent modules will be determined by you

Free Access to DataCamp to assist with ChatGPT and CoPilot learning

Data literacy and AI Fundamentals certificates possible

Weekly office hours

Ability to learn 70+ Gen AI tools

Ability to share content with others

Let's Talk About Gen AI

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!

Computer vision
Capabilities within AI to interpret the world visually through cameras, video, and images.

Document intelligence
Capabilities within AI that deal with managing, processing, and using high volumes of data found in forms and documents.

Generative AI
Capabilities within AI that create original content in a variety of formats including natural language, image, code, and more.

Machine learning
This is often the foundation for an AI system and is the way we "teach" a computer model to make predictions and draw conclusions from data.

Natural language processing
Capabilities within AI for a computer to interpret written or spoken language, and respond in kind.
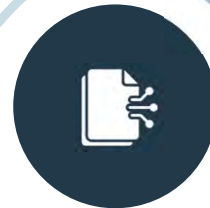
Knowledge mining
Capabilities within AI to extract information from large volumes of often unstructured data to create a searchable knowledge store.
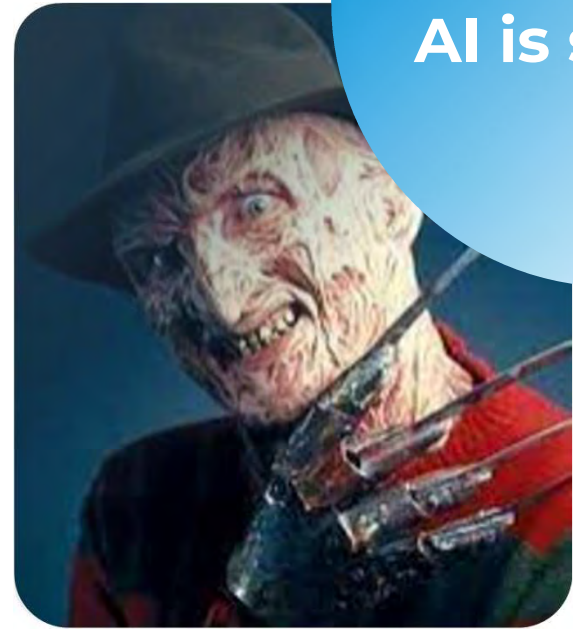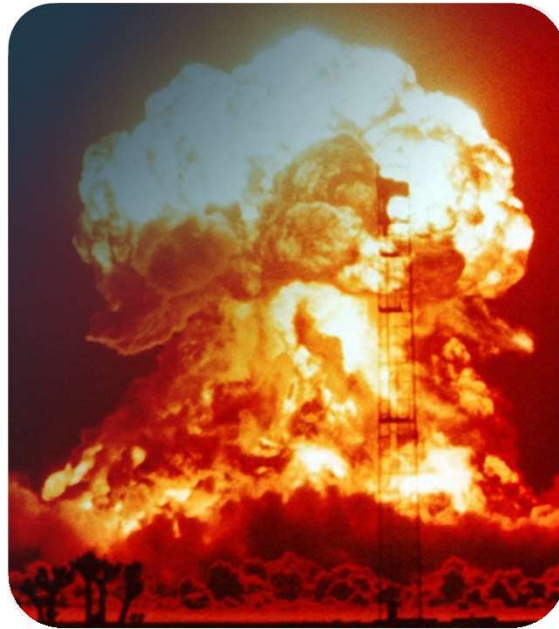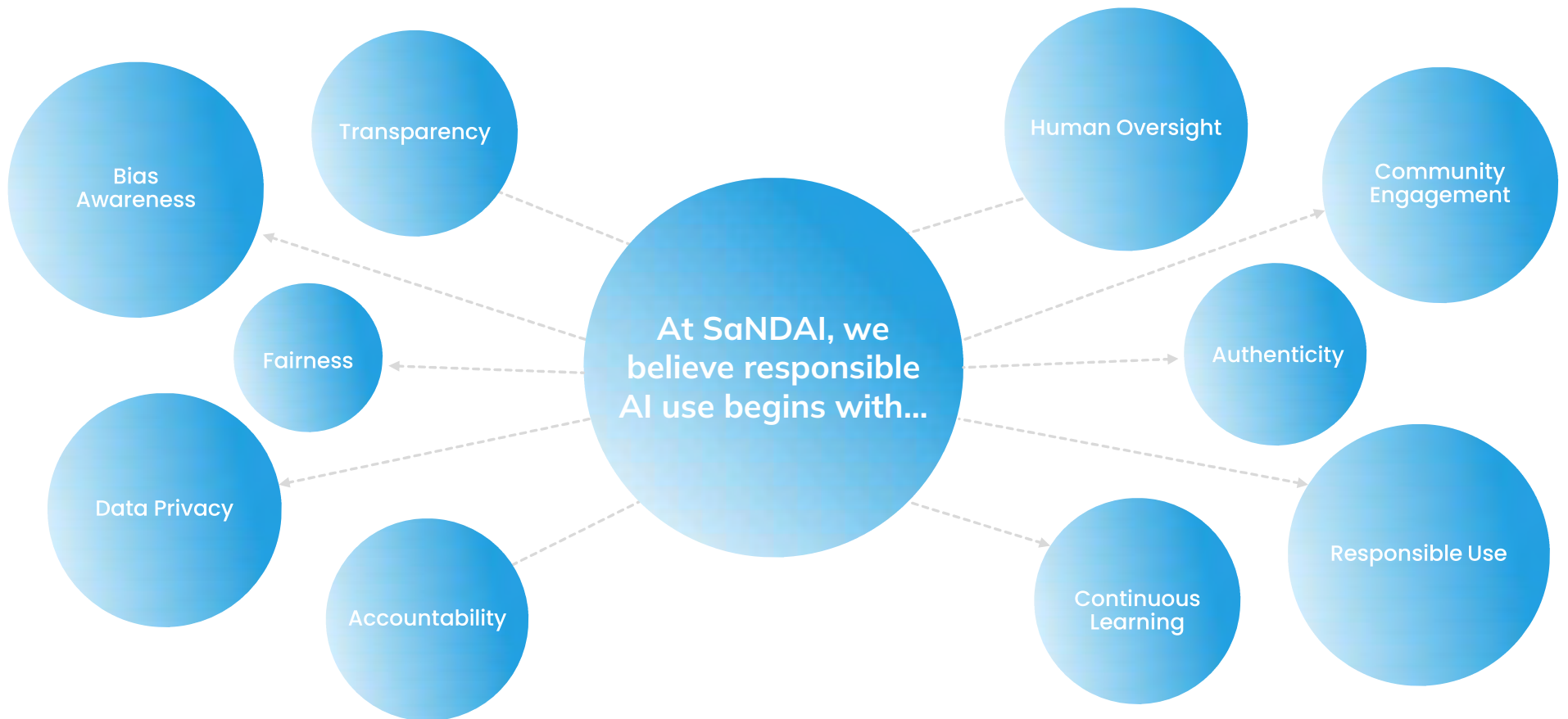
AI Presents Challenges

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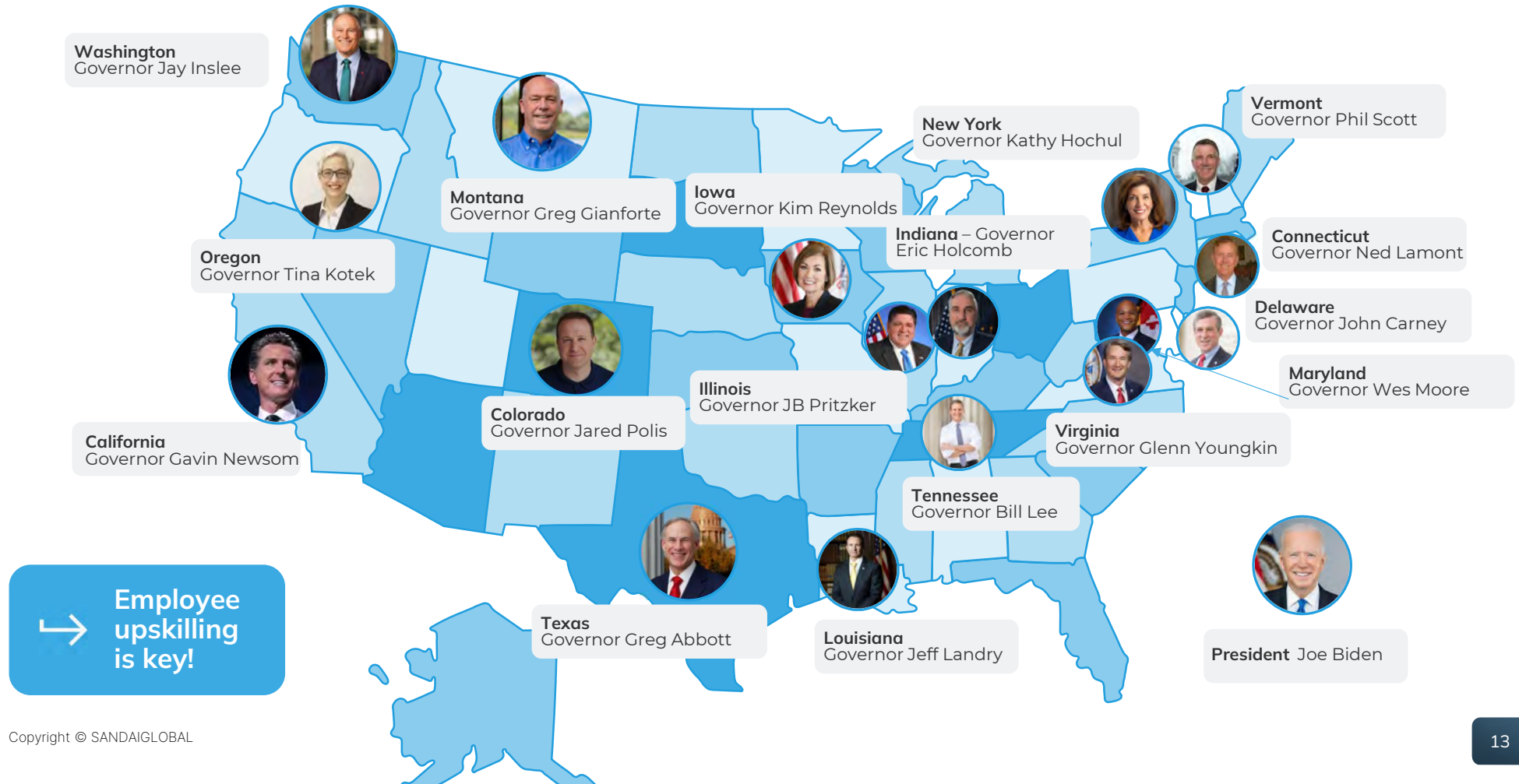
To many, AI is scary!

Understand Responsible AI

Bias Awareness

Transparency

Human Oversight

Community Engagement

Fairness

At SaNDAI, we believe responsible AI use begins with...

Authenticity

Data Privacy

Accountability

Continuous Learning

Responsible Use

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

SaND)AI

Washington
Governor Jay Inslee

Vermont
Governor Phil Scott

New York
Governor Kathy Hochul

Montana
Governor Greg Gianforte

Iowa
Governor Kim Reynolds

Indiana – Governor Eric Holcomb

Connecticut
Governor Ned Lamont

Oregon
Governor Tina Kotek

Delaware
Governor John Carney

Illinois
Governor JB Pritzker

Maryland
Governor Wes Moore

California
Governor Gavin Newsom

Colorado
Governor Jared Polis

Virginia
Governor Glenn Youngkin

Tennessee
Governor Bill Lee

→ **Employee upskilling is key!**

Texas
Governor Greg Abbott

Louisiana
Governor Jeff Landry

President Joe Biden

SaND AI

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

2.9M+ Federal employees

David Salvagnini

THE WHITE HOUSE

technical positions to facilitate a[...]e 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

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Office of Governor GAVIN NEWSOM

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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:

Search

Recent News

Governor Newsom Announces Appointments 1.19.24

Governor Newsom Issues 2023 Social Innovation Impact Report

Governor Newsom Announces

880K+ state and local employees

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

SaND AI

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GenAI is changing nearly every industry

and will impact society in ways we are just beginning to understand

The GenAI industry is on the cusp of remarkable growth!

According to Bloomberg growth is set to surge from a valuation of $40 billion in 2022 to an estimated $1.3 trillion in the coming decade.
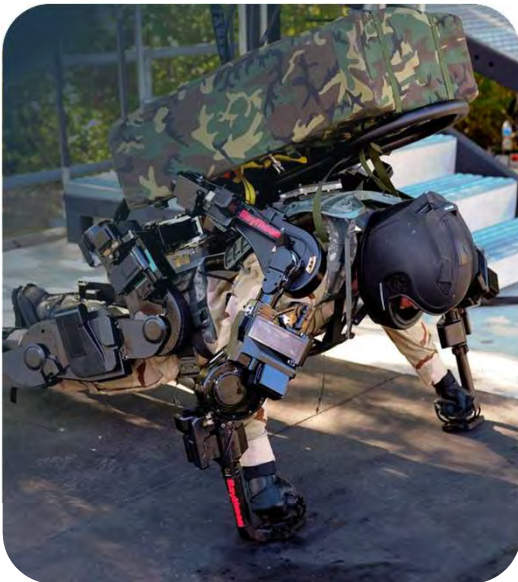
SaND AI

2022

$40
Billion

42%
(CAGR)

2032

$1.3
Tillion

→ **Growth will be fuelled initially by advancements in training infrastructure**

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Understanding Generative AI

SaNDAI

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

Let's Talk About DataCamp

DataCamp is used by 70% of the Fortune 100.

Consists of 400+ courses

You can learn at your own pace
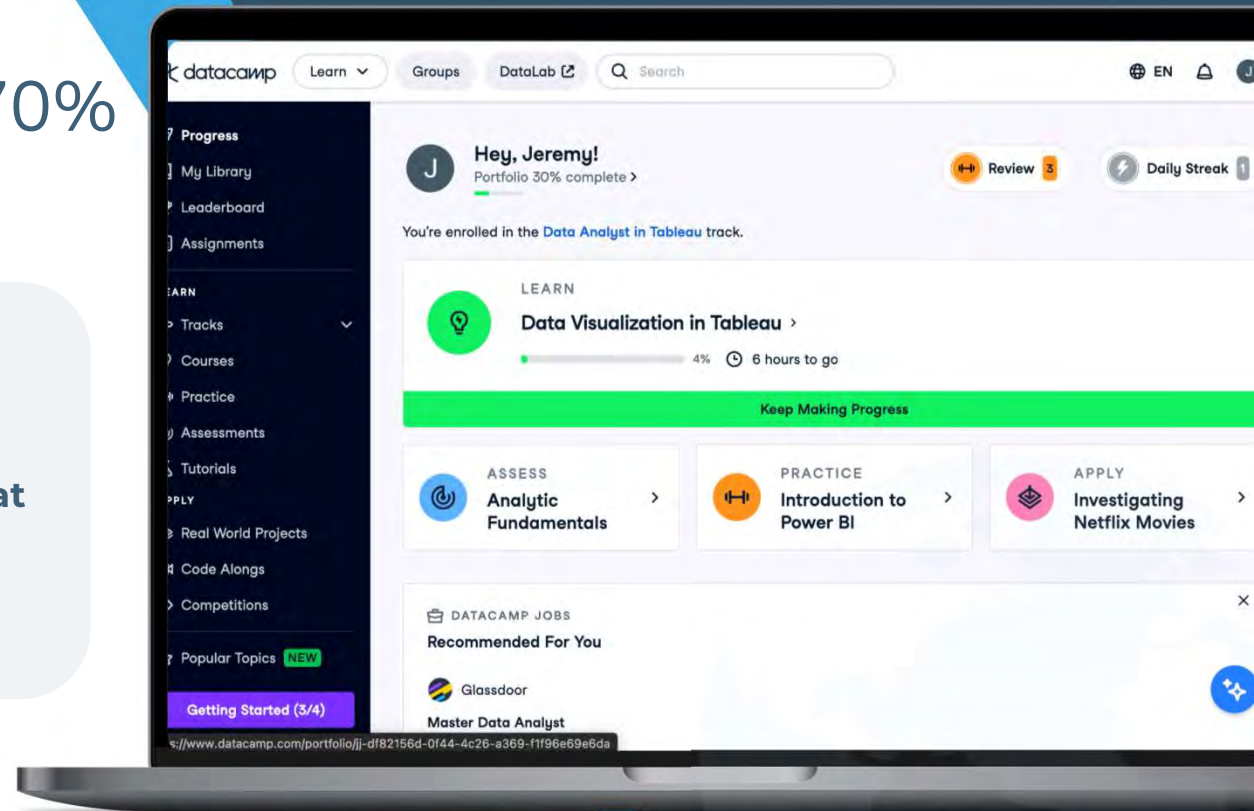
Data literacy and AI Fundamentals certificates
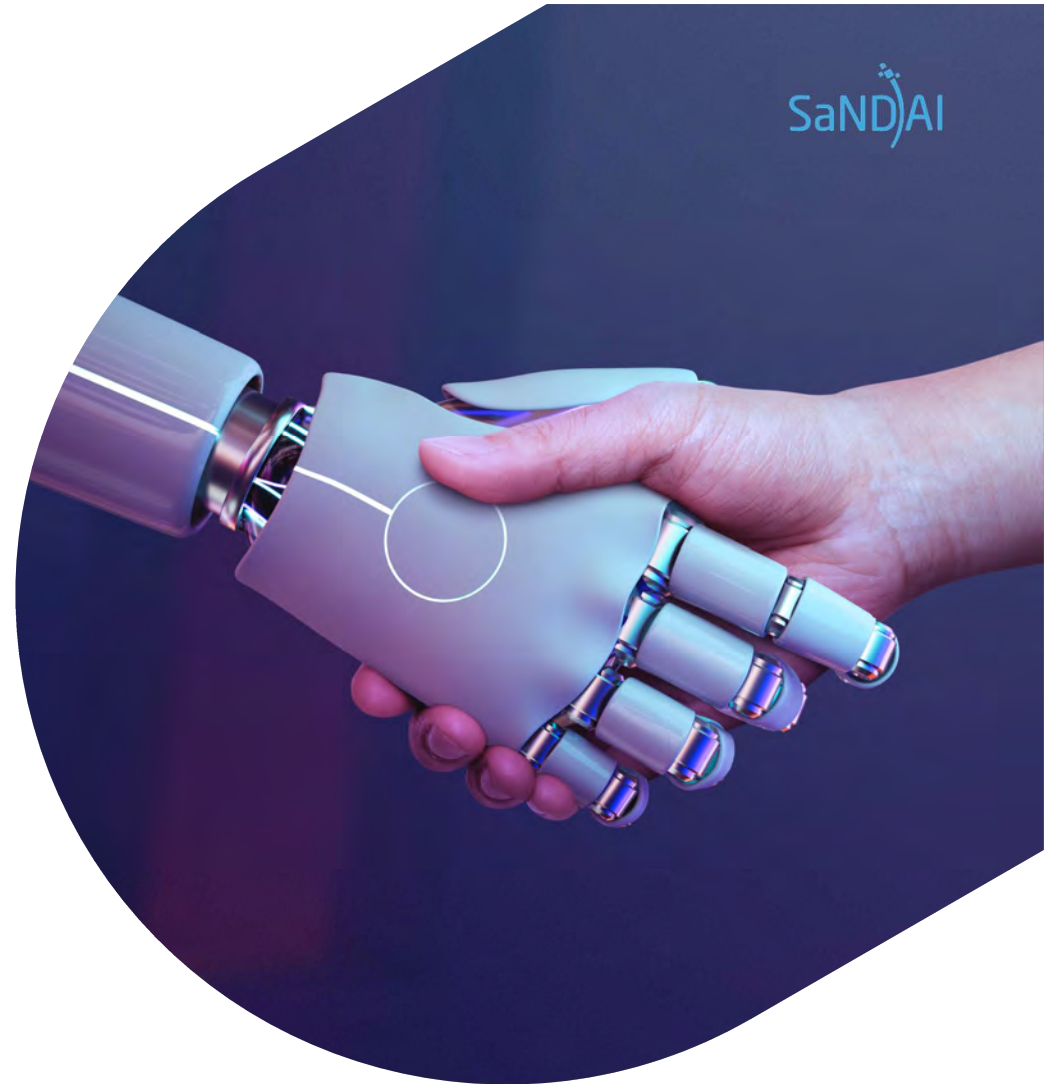
What is ChatGPT?

Who is OpenAI, and what is its mission?

The company behind ChatGPT. One of the world's leading AI research organizations established in 2015 by a group of entrepreneurs, researchers and tech visionaries including Elon Musk and Sam Altman, with the goal of developing safe, beneficial and accessible AI tools for all.

NASA and OpenAI share similar core values

1. Safety
2. Transparency
3. Collaboration
4. Mutual benefit

While exploring new frontiers be it in Aerospace science or AI technology!

SaNDAI

WHAT IS ChatGPT?

- A conversational AI model that generates human-like text

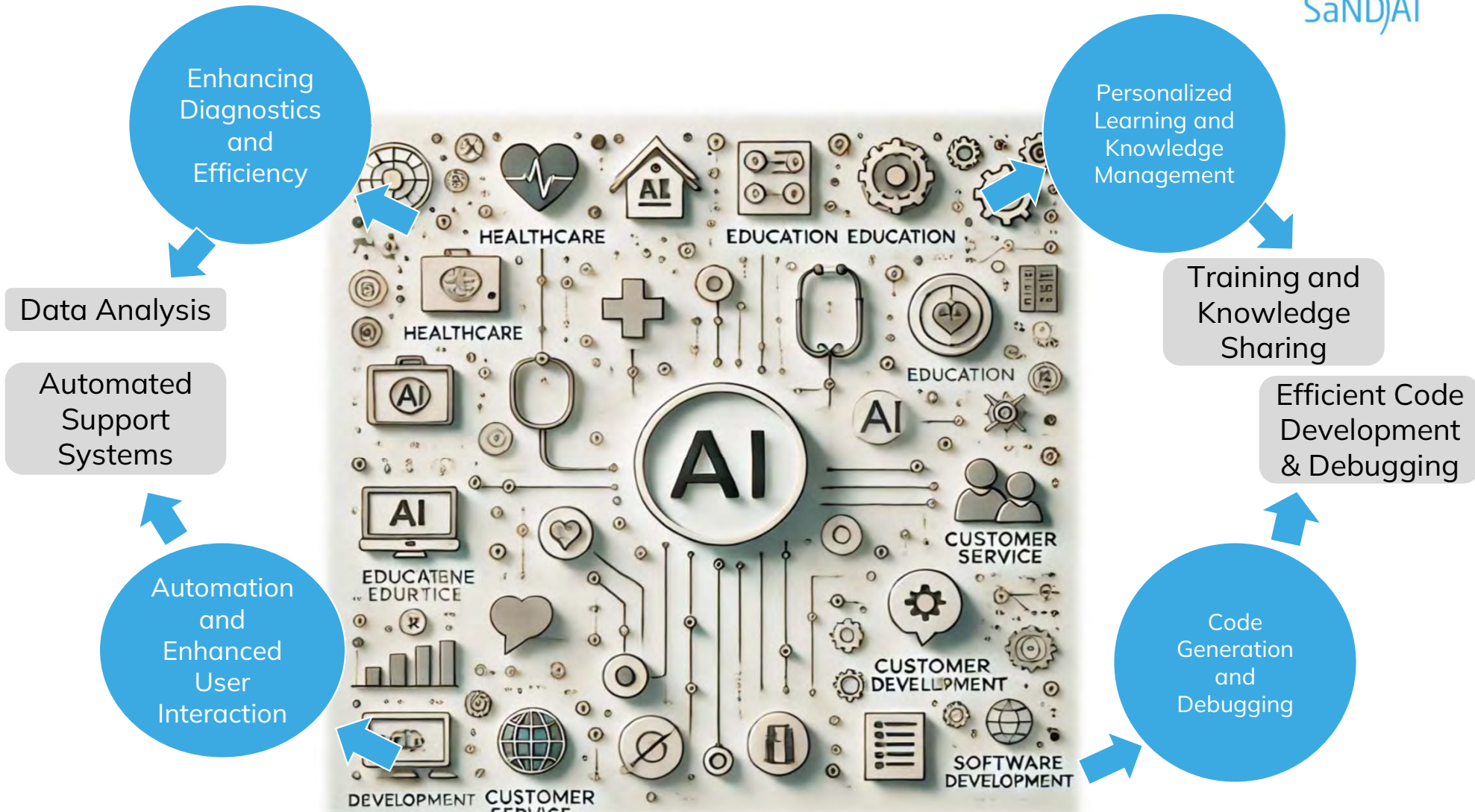**How is it different from other search engines like Google?**

Capabilities:
- literature research and reference
- communication
- content and idea generation
- problem-solving, and so much more!

Key Features:
- **Context-Aware Responses:** it remembers what has been said earlier in the conversation
- **Real-Time Adaptation:** adapts its responses based on how users interact with it

ChatGPT has many cross-sector applications!

SaND AI

Enhancing Diagnostics and Efficiency

Personalized Learning and Knowledge Management

Data Analysis

Automated Support Systems

Training and Knowledge Sharing

Efficient Code Development & Debugging

Automation and Enhanced User Interaction

Code Generation and Debugging

Potential ChatGPT Applications at NASA

For Engineers: Drafting technical documents, troubleshooting, code review, generating simulations.

For Facilities Personnel: Automating maintenance schedules, tracking inventory, managing logistics, and answering routine queries.

For Mission Planning and Support: Automating documentation, providing data insights, and offering suggestions.

The applications are numerous!

Tips for Creating Effective Prompts

SaND AI

Start Simple:
Begin with basic requests, then build up complexity.

Experiment:
Test different approaches to find the most effective phrasing.

Use Follow-ups:
If the initial response isn't quite right, ask follow-up questions or provide more details.
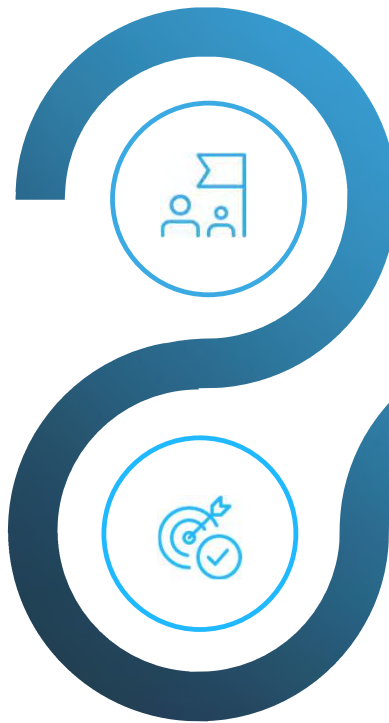
ChatGPT Demo and Case Study

Section 3: What is CoPilot?

Microsoft Copilot: A Journey of AI Integration

SaNDAI

LAUNCHED JUNE (2021)

At that time, GitHub Copilot was primarily used for code suggestions, debugging assistance, writing tests, providing code explanations, generating regular expressions, and conducting code reviews.

INTEGRATION IN MICROSOFT 365 MARCH (2023)

It was integrated into Microsoft 365 applications such as Word, Excel, PowerPoint, Outlook, and Teams, offering AI-powered assistance to boost productivity through natural language inputs and task automation.

POWERED BY OPENAI'S GPT MODEL (2023-2024)

Copilot utilizes OpenAI's advanced GPT models, including GPT-4, to understand context, generate human-like responses, and handle complex tasks such as content creation, data analysis, and project management.

"Unlock Copilot's Capabilities: From Simple Edits to Complex Projects"

Machine Learning is the foundation for most AI solutions

1. Simple Tasks: Summarize documents, draft proposals, and compose email responses.
2. Moderate Tasks: Summarize budget sheets, generate PowerPoint presentations, and create basic reports
3. Complicated Tasks: Produce comprehensive reports with citations and perform detailed data analysis.
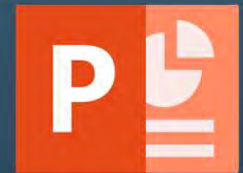
Microsoft Copilot

The AI-driven assistance provided by Microsoft Copilot has far-reaching implications across various industries, including its transformative impact on NASA's operations. Here are some specific applications and the impact it has on NASA.

Key Features in Microsoft Word

Smart Writing Assistance: Copilot offers grammar and style suggestions, helps with rephrasing sentences, and ensures your writing is clear and concise.

Key Features in Microsoft PowerPoint

Slide Design Suggestions: Based on the content, Copilot can recommend design templates, layouts, and visuals to enhance the presentation.

Key Features in Microsoft Excel

Formula Suggestions: Copilot can recommend and correct formulas, ensuring accuracy in calculations..

Content Summarization

Copilot can generate summaries of long documents, making it easier to digest key points

Automated Slide Generation

Copilot can create slides from a given outline, ensuring consistency and saving time.

Predictive Analysis

Copilot can perform advanced data analysis and provide insights into future trends.

ChatGPT Demo and Case Study

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Contact me!

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✉️ jeremy@sandaiglobal.com

🌐 https://sandaiglobal.net/

Scan to learn more

🚀

"Innovation distinguishes between a leader and a follower"
- Steve Jobs.

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DOT CONNECTORS