IAITAM ACE
May 7–9, 2024 The M Resort Las Vegas, NV

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"AI's Failures in Automating Asset Management"

Case Studies in Human Intervention Preventing AI Automation

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Agenda

- Speaker Background
- Topic Overview
- Definitions
- Case Studies
- Lessons Learned
- Conclusion
- Q & A

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But First – Something entertaining…

ITAM needs to be your "single source of truth"

Do you rely on your customers to tell you what assets you are responsible for supporting?

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Speaker Background

Public and Private Sectors

Verticals:
- **Defense**
- **Healthcare**
- **Finance**
- **Technology**
- **Consulting**

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Partial Client list:
- **Defense**
  - Pentagon, NASA, USAF, US House of Rep
- **Healthcare**
  - Memorial Hermann, Catholic Health
- **Finance**
  - Capital Group, Transamerica, Capital One
- **Technology**
  - Dell, Southwest Research, BMC Software
- **Consulting**
  - Bearing Point, Capgemini, CGI, Accenture

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Topic Overview

- How do we (unintentionally) prevent AI from being successful in achieving our goals of IT Asset Management?
- What do we do to allow AI to "fail" when we have the power to leverage AI for our benefit?
- We will review case studies that highlight how AI could have leveraged automation to improve IT Asset Management

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Definitions

- **Artificial Intelligence (AI)**
- **Machine Learning (ML)**
- **Large Language Model (LLM)**
- **Hallucination(s)**
- **Open Loop LLM's**
- **Closed Loop LLM's**

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Definitions - Artificial Intelligence (AI)

Artificial Intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think, learn, and problem-solve like humans. The goal of AI is to develop systems that can perform tasks that typically require human intelligence.

(ChatGPT, 2024)

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Definitions - Machine Learning (ML)

Machine Learning (ML) is a subset of artificial intelligence (AI) that focuses on the development of algorithms and statistical models that enable computers to perform tasks without explicit programming. The central idea behind machine learning is to give computers the ability to learn and improve their performance automatically from experience or data. Instead of being explicitly programmed for a specific task, a machine learning system is trained on a dataset to recognize patterns and make decisions or predictions. (ChatGPT, 2024)

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Definitions - Large Language Model (LLM)

A large language model refers to a type of artificial intelligence (AI) model that has been trained on a vast amount of textual data to understand and generate human-like language. These models are designed to process and comprehend the complexities of natural language, allowing them to perform tasks such as text generation, summarization, translation, question answering, and more.

(ChatGPT, 2024)

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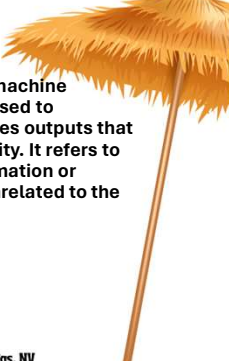
Definitions - Hallucination

In the context of artificial intelligence and machine learning, the term "hallucination" is often used to describe a situation where a model generates outputs that are not grounded in the training data or reality. It refers to instances where the model produces information or predictions that seem to be imaginary or unrelated to the input data.

(ChatGPT, 2024)

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Definitions - Open Loop LLM

Large Language Models that are open to the internet. Typically populated by publicly available data and accessible by anyone with an internet connection and permissions to the LLM (i.e. ChatGPT)

Advantages – Populated by public data, open to access by users regardless of affiliation

Disadvantages – Open to being populated with inaccurate, missing or false information

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Definitions - Closed Loop LLM

Data models which are not exposed to the internet. Typically populated only by the owner(s) of the data and only accessible by users associated with the ownership of the LLM (i.e. eBay's Louis Vuitton authentication model)

Advantages – No risk of data being populated or accessed outside of the "closed loop"

Disadvantages – Unable to be accessed by users outside of the organization

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Top Three Advantages of AI

• Automation and Efficiency
• Data Analysis and Insights
• Improved Productivity

(ChatGPT, 2024)

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Automation and Efficiency

AI can automate routine tasks, improving efficiency and allowing human workers to focus on more complex and creative aspects of their jobs. This is particularly valuable in industries such as manufacturing, logistics, and customer service.

(ChatGPT, 2024)

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Data Analysis and Insights

AI systems can process vast amounts of data quickly and identify patterns that may be difficult for humans to discern. This capability is beneficial for data analysis, providing valuable insights for decision-making in areas like finance, healthcare, and marketing.

(ChatGPT, 2024)

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Improved Productivity

AI-powered tools and software can enhance productivity by providing intelligent assistance in various tasks. Virtual assistants, for example, can schedule appointments, answer queries, and perform other administrative functions, freeing up time for individuals

(from ChatGPT)

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Case Studies

Client Sectors:
- **Dept of Energy**
- **Dept of Defense**
- **Consulting**
- **Energy**
- **Legislative**
- **Aerospace**

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Dept of Energy Client

Objective:
Implement Network Discovery Tool Across Network

Potential Benefits:
Auto discovery of Assets and Attributes
- OS, Drives/Space, SW, RAM, Patches
No direct need for credentials
- Stored in "vault" with secure access
Can be scheduled or run manually
- Automate discovery process or single instance
Creates new Product Catalog entries automatically
- "Learns" new assets types as discovered

Results:
- *Successful POC Deployment*
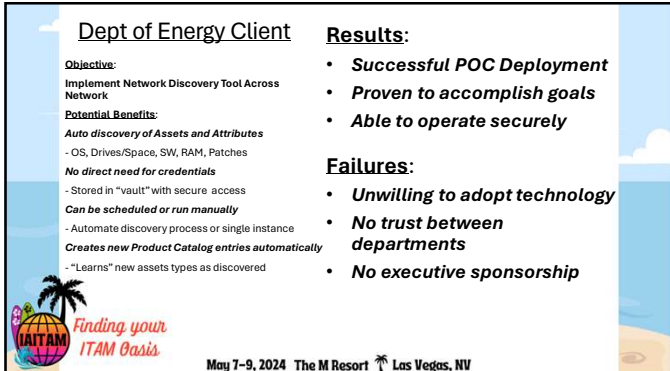- *Proven to accomplish goals*
- *Able to operate securely*

Failures:
- *Unwilling to adopt technology*
- *No trust between departments*
- *No executive sponsorship*

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Dept of Defense Client

Objective:
Conglomerate Multiple Data Sources
Potential Benefits:
Leverage Existing (Multiple) Data Providers
- SCCM, BMC ADDM, Flexera, others (10 total)
Optimize Data Provider Catalog(s)
- Requires establishing precedence among vendors
Incorporate Attribute Level Asset Precedence
- Requires establishing attribute presence rules
Creates new Product Catalog entries automatically
- "Learns" new assets types as discovered

Results:
- *No automated data feed*
- *Product Catalog Out of Sync*
- *No CMDB implementation*

Failures:
- *Unwilling to prioritize data*
- *No attribute precedence*
- *No Product Catalog owner*

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Consulting Client

Objective:
Analyze and improve Asset Management Process
Potential Benefits:
Increased productivity
- Automate manual processes
Increased accountability and data integrity
- Provide escalation path for bad data
Elimination of non-Asset data in CMDB
- Requires establishing attribute presence rules
Create new Product Catalog entries automatically
- "Learn" new assets types as discovered

Results:
- *No automated data feed*
- *Bad CMDB data*
- *Product Catalog Out of Sync*

Failures:
- *Unwilling to modify processes*
- *No accountability for bad data*
- *No Product Catalog owner*

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Energy Sector Client

Objective:
Maintain Accurate Asset Data and Mapping
Potential Benefits:
Comply with NERC regulatory requirements
- Assure asset data completeness and accuracy
Provide accurate Asset Data for ITSM
- Maintain accuracy in "Golden Dataset" (CMDB)
Reduce manual revisions to Application Maps
- AI automatically creates accurate Application Maps
Creates new Product Catalog entries automatically
- "Learns" new assets types as discovered

Results:
- *Manual vs. Automated updates*
- *Failing NERC Asset Auditing*
- *Inaccurate CMDB data*

Failures:
- *Manual Direct SQL updates*
- *Lack of AI feature functionality*
- *No Executive Backing/Sponsor*

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Federal Client

Objective:
Automate updates for legislative offices
Potential Benefits:
Reduced time to update data
- Eliminate manual update process
Increased data integrity
- Reduction of errors from manual input
Utilize automated data feed
- Allow data sources to populate input

Results:
- *Tested successfully with live data*
- *Entire process documented*
- *SDLC best practices utilized*

Failures:
- *Automation not utilized*
- *Manual process used instead*
- *Lack of trust by management*

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Aerospace Client

Objective:
Resolve CMDB Data Feed Failures
Issues to be resolved:
Duplicate CMDB records for the same CI
- Multiple records with differing status values
Custom code no longer functioning
- OEM & Partners unable to resolve
IP Phones no longer detected
- Recent scan data missing from CMDB

Results:
- *Code modified to allow deletes*
- *Old data was allowed to delete*
- *Custom code overwritten by update*

Failures:
- *Lack of automation knowledge*
- *Updates not reviewed*
- *Management not receptive*

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Lessons Learned

- Get Executive Sponsorship for ITAM initiatives
- Leverage Automation wherever possible
- Identify Stakeholders
- Follow Industry Best Practices
- Keep non-IT purchases out of Asset Management

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The "Christmas Ham" parable

Doing something because "that's always been the way we have done it in the past, but we don't know why"

Ask "Why" – Maybe there's a better way or no reason to continue doing what you "have always done"

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Conclusion

- Leverage automation wherever possible
- Ask "Why", and listen to the answer(s)
- Hold stakeholders accountable
- Implement escalation paths where appropriate
- Don't let "current" processes hold AI hostage
- Implement AI safely rather than rapidly

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Q & A

Time for your questions
- Your Name
- Your Company
- Your Question

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Speaker References

- Article: Presenting to the FBI's InfraGard on Artificial Intelligence - https://www.linkedin.com/feed/update/urn:li:activity:7165390571971301376/
- Video: Implementing your CMDB - Phil Bautista, Bull Creek Data (https://youtu.be/vAiXrZ71afw)
- Article: Implementing ITSM without a CMDB? Now THAT's Scary!!! - https://www.linkedin.com/pulse/implementing-itsm-without-cmdb-now-thats-scary-phil-bautista/?trackingId=GWBTGWVuTDihXIIp7VqCFQ%3D%3D
- Article: Keynote on AI @ IEEE Rising Stars Conference 2024 - https://www.linkedin.com/pulse/keynote-ai-ieee-rising-stars-conference-2024-phil-bautista-uhijc/?trackingId=5tE7T7WzSubrAVYdBbiefw%3D%3D (https://youtu.be/7GtOL2L-kJA)
- Video: Stephen Ibaraki, world renowned entrepreneur, investor, and futurist interviews Phil Bautista (https://youtu.be/h3UtOL9g_Yg)

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Thank You

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