IAITAM ACE 2025

ITAM - Another Brick In The Wall

Integrating AI & Machine Learning into IT Asset Management

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Speaker

AVIK GHOSH

VP, AI & Data Product Management

Oomnitza
Technology Asset Management

Avik leads Oomnitza's efforts with helping companies drive measurable business value through AI, data solutions for modern IT Asset Management.

Agenda

- Introduction
- Identifying High-Value Use Cases
- Analyzing Data & Building ML Models
- Deploying Apps and Tools
- Key Takeaways & Open Discussion

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Introduction

Objectives of This Session

- ❏ Understand how ITAM + AI can drive business value.
- ❏ Understand practical insights into deploying AI effectively in an enterprise IT environment.
- ❏ Discuss challenges and strategies for ensuring high-quality data.
- ❏ Open discussion on real-world challenges and use cases.

AI Is Expected To Drive Significant Business Value For ITAM

Key Areas of Business Value

Improve Operational Efficiency & Effectiveness

- **66%** Increased productivity
- **30%** Increased efficiency

Reduce Risk

- **100%** Audit compliance
- **33%** Improvement in operational reliability
- **28%** Reduction in cybersecurity threats

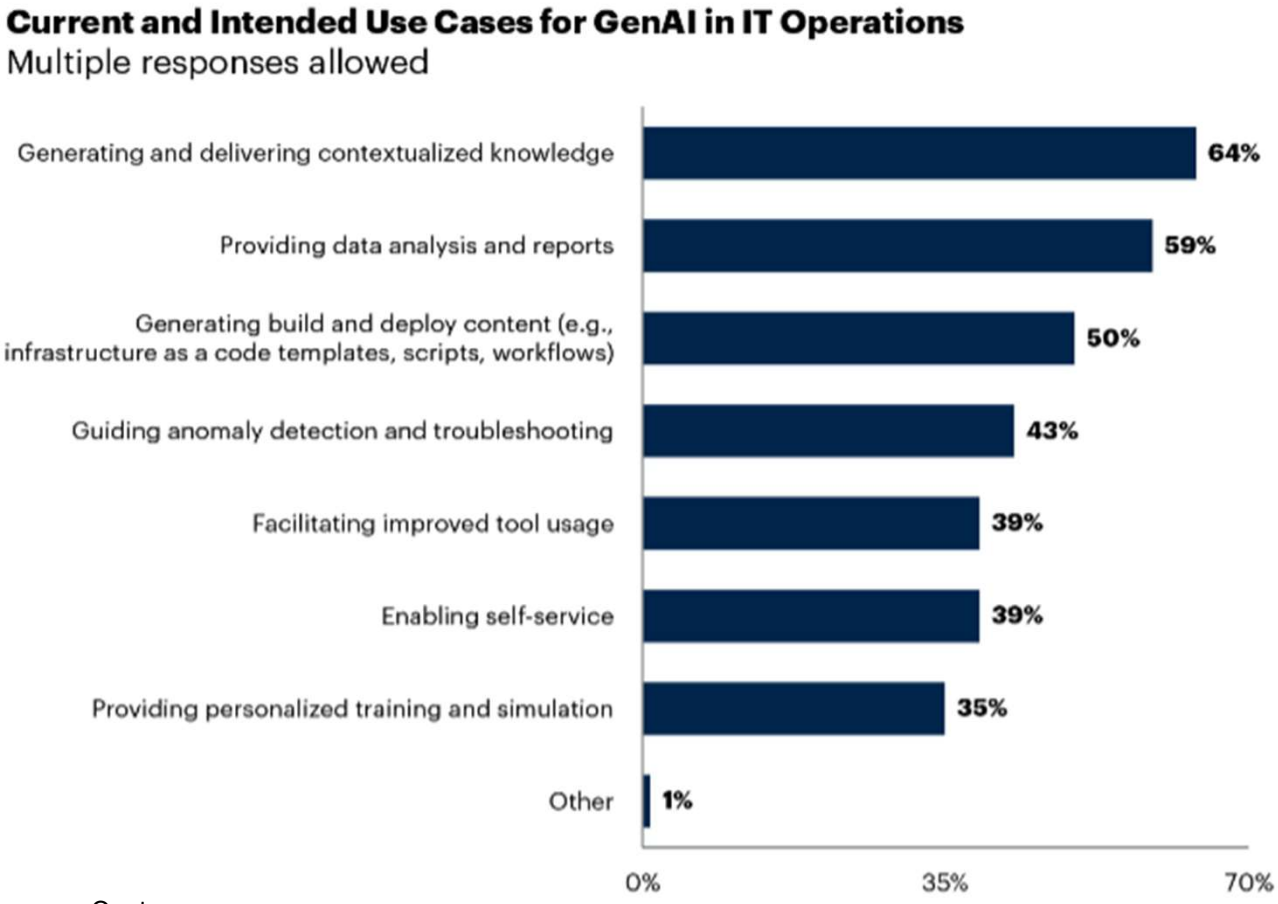
Reduce Costs & Optimize Profit

- **70%** Reduction in wasteful spending
- **30%** Increase in profitability
- **5x** Average ROI on technology investments

Accelerate Business & Drive Growth

- **150%** Faster deployments of services
- **30%** Faster decision making
- **12%** Revenue increase from “tech-as-a-service” business models

ITOP Teams Are Accelerating Adoption of AI to Drive Value



Source: Gartner

60%

of all IT operations tools will include AI Agents by 2028

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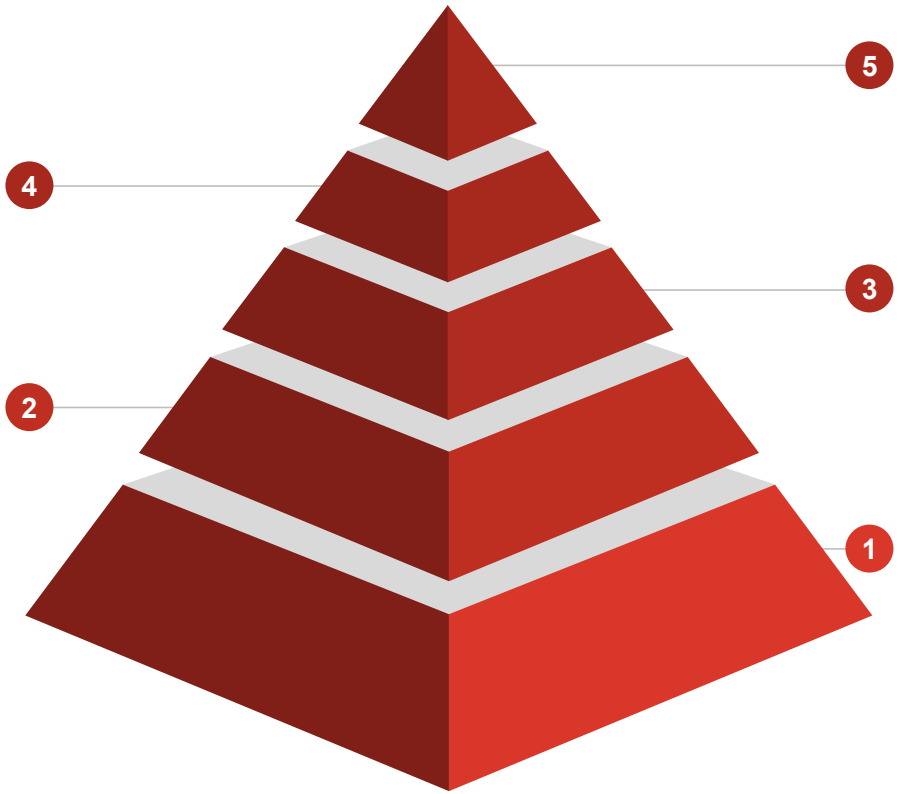
Approach for Deploying AI in Business



5 Deploy AI Apps & Tools
Develop AI software solutions that are accessible to users, easy to use, and help drive value to the business

4 Build Models
Apply ML approaches such as clustering, regressions, decision trees, neural networks, RAG, agents, and customized LLMs

3 Exploratory Data Analysis
Perform analysis on data to identify key factors that impact business objectives

2 Process Data
Gather, clean, structure, and standardize data from all essential sources

1 Identify High-Value Use Cases
Identify, evaluate, quantify, and prioritize business processes and activities that have the greatest impact to the business

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Identify High-Value Use Cases

Start by Understanding Business Value Drivers for ITAM

Identify
Themes & Value Drivers

- Improve Operational Efficiency & Effectiveness
- Reduce Risk
- Reduce Costs & Optimize Profit
- Accelerate Business & Drive Growth

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Identify High-Value Activities Across Asset Lifecycle Mgmt

Example Activities:

Planning	Acquisition & Procurement	Deployment	Usage & Operation	Maintenance	Retirement & Disposal
Define business requirements for new IT assets	Evaluate and select vendors based on cost, quality, and compliance	Configure, test, and provision IT assets before deployment	Monitor asset usage, performance, and compliance	Schedule routine maintenance, updates, and patching	Identify assets reaching end-of-life or requiring replacement

Identify How AI Can Enable & Accelerate Key Activities

- Intelligent Automation Of Tasks
- Improving Security & Compliance
- Predictive Maintenance
- Cost Reduction & Profit Optimization

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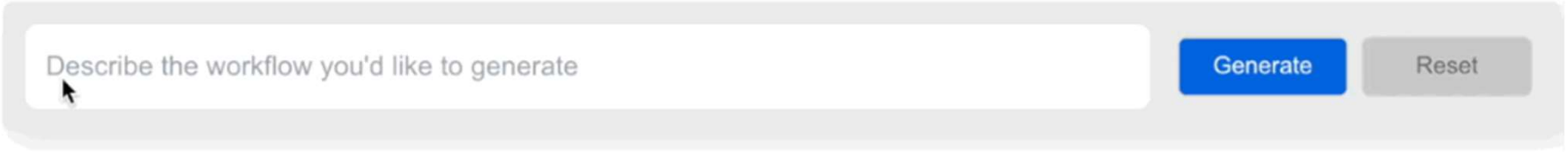
Example AI Solution For ITAM:

Oomnitza AI-Driven Workflow Generation



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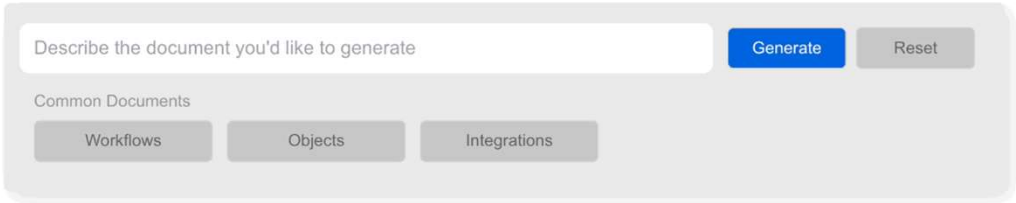
Example AI Solution For ITAM:

Oomnitza AI-Driven System Documentation For Audits



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Example AI Solution For ITAM:

Oomnitza AI-Driven Relationship Modeling (Graph RAG)

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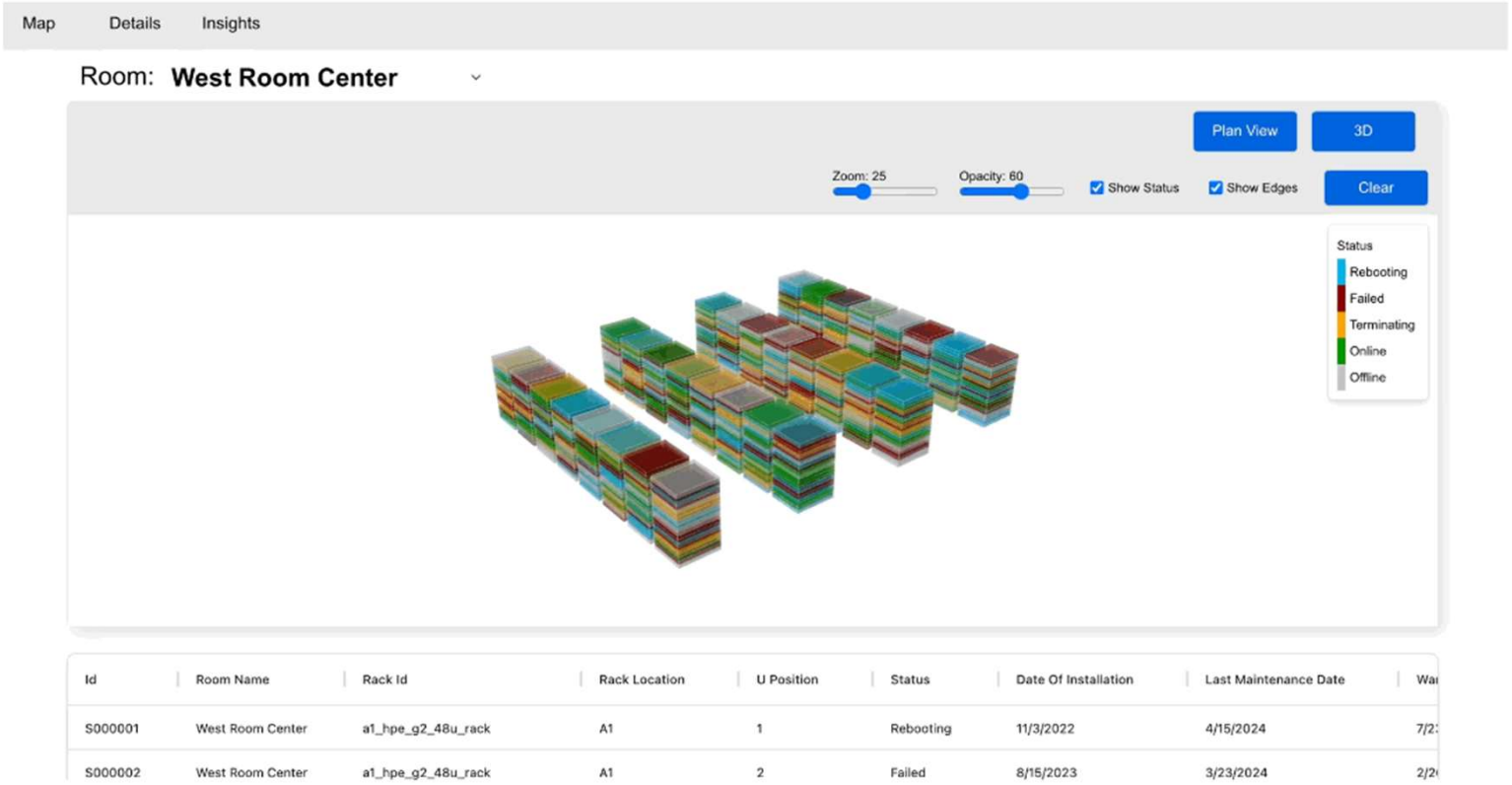
Example AI Solution For ITAM:

Oomnitza AI-Driven Data-Center Infrastructure Management



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Analyzing Data & Building ML Models

Basic Concept & Approach

Given several variables (x), predict a target variable (y)

$$y = w_1x_1 + w_2x_2 + w_3x_3 \ldots + w_nx_n$$

w= weights. Since x and y are determined from data, **the goal is to calculate weights**

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Most Businesses Struggle With Data Quality & Processing

- Errors With Data Collection
- Limited Automation
- Poor Data Model Design
- Shadow IT and Untracked Assets
- Siloed Data Sources
- Poor Data Governance

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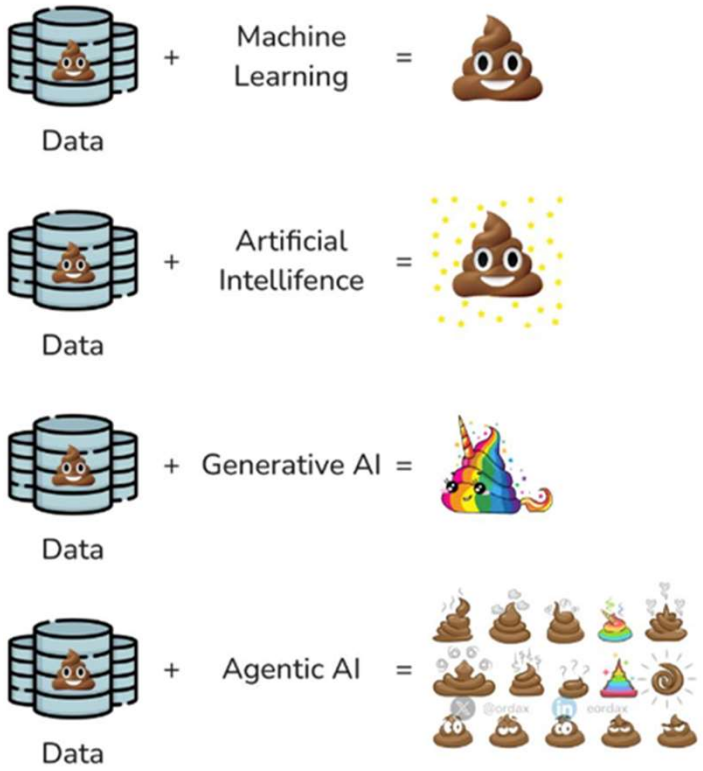
Bad Data Leads to Bad AI Leads to Critical Business Issues



"Highly capable **agentic AI using inaccurate data will cause outages, exposed attack vectors and budget overruns**. I&O leaders must take immediate action to address data quality in technology asset repositories, observability and IT monitoring tools, configuration management databases (CMDBs), and other systems of record."

– Roger Williams | VP, Research at Gartner

Source: *Innovation Insight: Agent-Native I&O*

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delivers accurate, high quality ITAM data

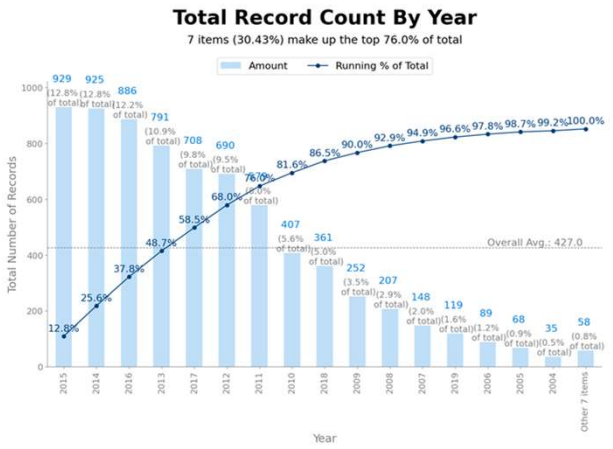
Exploratory Data Analysis (EDA)

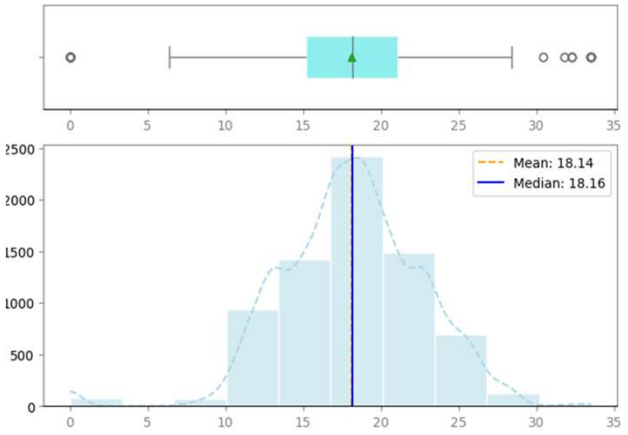
What is EDA?

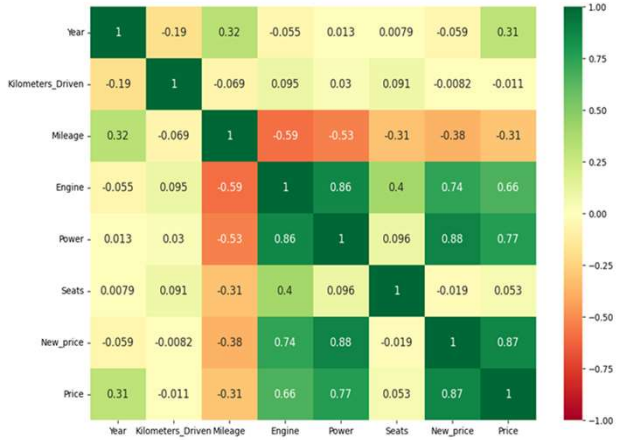
- Combination of visualization techniques and statistical methods
- Exploring and summarizing key information within the data

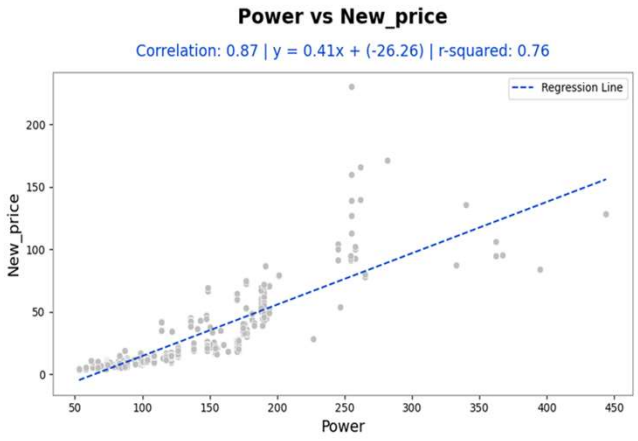
Why EDA is Useful?

- Gain good insights into the data
- Uncover underlying structure of the data
- Determine the best strategy to handle unclean data (**missing values**, **outliers** etc.)
- Identify initial set of observations and insights
- Establish intuitive understanding of data to help validate results derived from ML models later









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Preparing Data For Machines To Understand

Raw Data

Features (also Dimensions)

Goal: Predict This

Observations

SquareFeet	Bedrooms	Bathrooms	Neighborhood	YearBuilt	Price
2,666	3	1	Suburb	1985	$170,070
2,827	3	2	Urban	2001	$346,339
2,514	5	2	Rural	1996	$210,800
1,779	5	1	Suburb	2011	$127,488
2,389	3	1		1986	$307,190
2,897		3	Urban	1995	$305,172
2,000	4	3	Rural	2009	$286,479
1,604	3	3	Urban	1978	$87,906
1,011	5	2	Suburb	1994	$145,770
2,207	3	1	Rural	1984	$317,883
Numerical Feature	Numerical Feature	Numerical Feature	Categorical Feature	Numerical or Categorical	Numerical Feature

Encoded Data

Independent Variables (X values)

Dependent Variable (Y values)

Intercept	SquareFeet	Bedrooms	Bathrooms	YearBuilt	Neighborhood_Suburb	Neighborhood_Urban	Price
1	2666	3	1	1985	1	0	170070
1	2827	3	2	2001	0	1	346339
1	2514	5	2	1996	0	0	210800
1	1779	5	1	2011	1	0	127488
1	2389	3	1	1986	1	0	307190
1	2897	3	3	1995	0	1	305172
1	2000	4	3	2009	0	0	286479
1	1604	3	3	1978	0	1	87906
1	2011	5	2	1994	1	0	145770
1	2207	3	1	1984	0	0	317883

Ensures that the model can better fit the data. If the intercept is omitted, the model may perform poorly and not capture the true relationship between the features and the target variable, especially if the data does not inherently pass through the origin.

Treat null values:

- Assumed **mode** for **categorical** features
- Assumed **median** for **numerical features**
- Since ML models are trained to look at variation, median and mode don't have negligible impact on predictions. Just address data gaps.

Categorical features need to be represented numerically as binary number (1 or 0).

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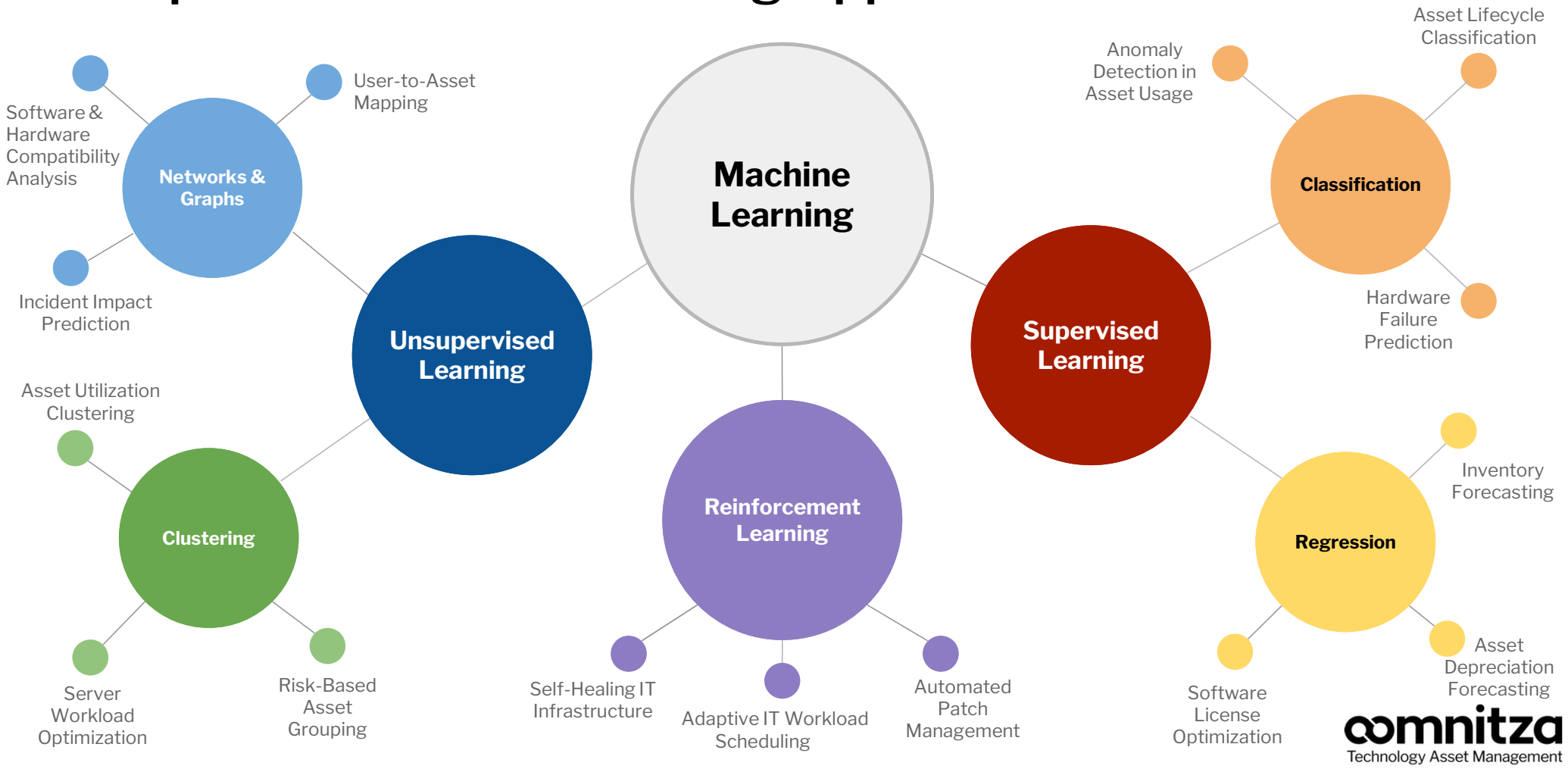
Examples of Machine Learning Approaches in ITAM



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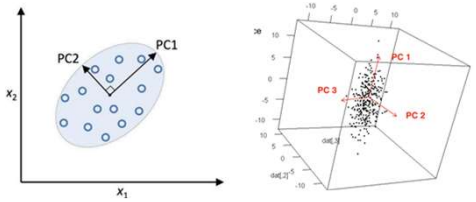
Common Machine Learning Approaches

Principal Component Analysis

Identifies the most significant features that impact the prediction variable

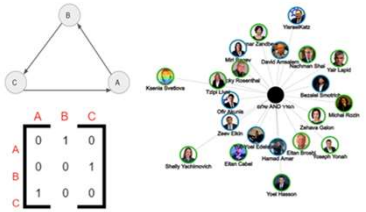


Clustering

Identifies patterns in data without prior labels or categories.

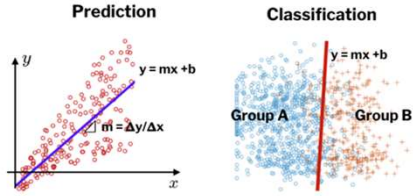
Network Analysis (Graph)

Models complex relationships



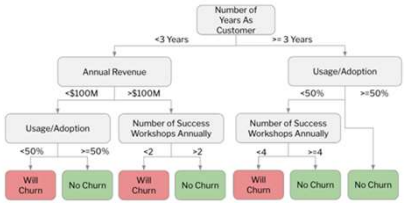
Regressions

Predicting continuous and discrete outcomes of linear relationships.



Decision Trees

Provides clear, interpretable models for predicting complex non-linear relationships



Time Series Forecasting

Predicting future values based on previously observed data over time.

Recommendation Systems

Collaborative filtering based on item characteristics to make recommendations

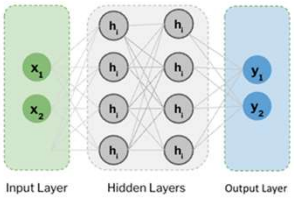
UserID	Role	Tenure	Level
1	Eng	5	NY
2	Mktg	3	LA
3	Sales	10	NY
4	Ops	8	LA
5	Support	1	SF

AssetID	Brand	Model
1	Apple	MacBook Air M4
2	Asus	Zenbook 14 OLED (Q425M)
3	Acer	Swift Go 14
4	Apple	MacBook Pro 14 (2024)
5	Dell	XPS 13

UserID	Asset 1	Asset 2	Asset 3	Asset 3	Asset 3
1	4	5	3	5	5
4	4	3	5	2	4
5	4	1	4	2	2

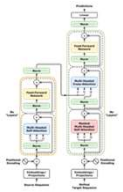
Neural Networks

Uses interconnected nodes to learn complex patterns and make predictions



Transformers & LLMs

Natural language processing (NLP) for next-word prediction



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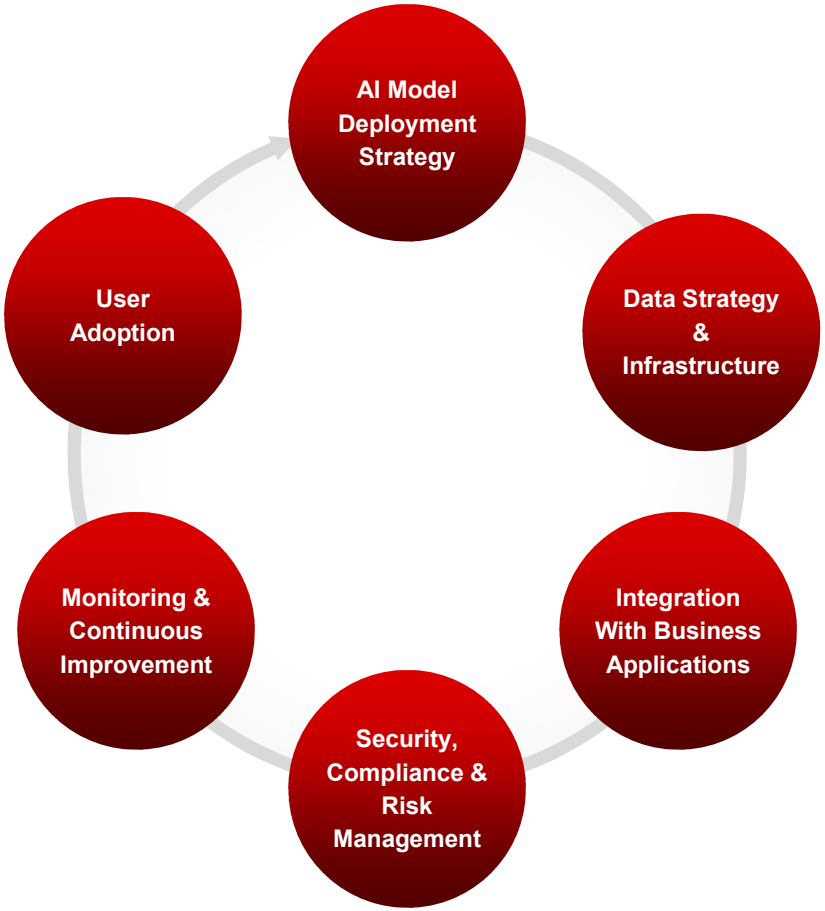
AI Apps and Tool Deployment

Key Factors to Consider for AI Deployment



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Key Takeaways & Open Discussion

Three Key Takeaways

1. **AI is Only as Good as Your ITAM Data**
   Without accurate, complete, and well-structured IT asset management data, AI solutions will struggle to provide meaningful business value. Poor data quality leads to unreliable predictions, inefficiencies, and failed AI initiatives.

1. **Business Context is Critical**
   If you don't have a clear understanding of how ITAM drives business value—such as cost optimization, security, compliance, or efficiency—AI-driven solutions will lack the right focus, leading to misaligned outcomes and wasted investment.

2. **Data Governance and Strategy are Prerequisites for AI Success**
   AI isn't a magic fix; it depends on a strong ITAM foundation. Prioritize data governance, normalization, and integration across IT ecosystems to maximize AI's potential to enhance decision-making and drive business impact.

Connect With Me

AVIK GHOSH

VP, AI & Data Product Management

oomnitza

Technology Asset Management

Email: **avik.ghosh@oomnitza.com**

LinkedIn: **avikghosh03**

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