Managing AI:
Turning Data, Drama, and Deadlines into Deliverables

Dr. Bob Schatz, CST

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Dr. ScrumBob's Background

- 40 years developing/leading in enterprise applications organizations as developer, manager, executive

- Led Primavera's successful early adoption of Scrum/XP (2002)

- Certified Scrum Trainer (CST), Cognitive Project Management AI (CPMAI)

- MS, Organizational Dynamics, University of Pennsylvania

- Doctor of Management, Strategic Leadership, Thomas Jefferson University

- Specialize in Agile Project Management, Organizational/Team Dynamics, Change Leadership, Artificial Intelligence Initiatives

Webinar Objectives

- **Understand the value of Scrum/agile approaches for AI Product Development**

- **Understand the similarities and differences between traditional SW Dev and AI/ML/Data product development**

- **Building your skills and tools you'll need to be successful in this era**

AI DEVELOPMENT

AGILE
SCRUM

MANAGEMENT
WEEK2 WEEK3 WEEK4

Is Agile Really Dead?

The reports of Agile's death have been grossly exaggerated!

- **This current AI wave is ONLY going to succeed with agile practices; GenAI will be your teammates, embrace it**

- **What IS dead is the hype, the dogma, and the framework debates...the market has spoken**

- **From the start, agile practices were always about delivering value in complex adaptive environments**

- **Certifications, agile or otherwise, are stronger than ever...it's just education...again, the market has spoken**

AI Project Insights

- AI could add $25.6 Trillion to the world's economy
- The global AI market is projected to reach $407 billion by 2027, growing at a compound annual growth rate (CAGR) of 36.2%
- 73% of US Companies use AI in some aspect of business
- Businesses can expect a 6%-10% revenue increase from AI
- **Only 26% of AI projects make it beyond pilot stage**
- **87% of data science projects never make it to production**
- **96% of orgs have problems with data quality, labeling, model confidence**

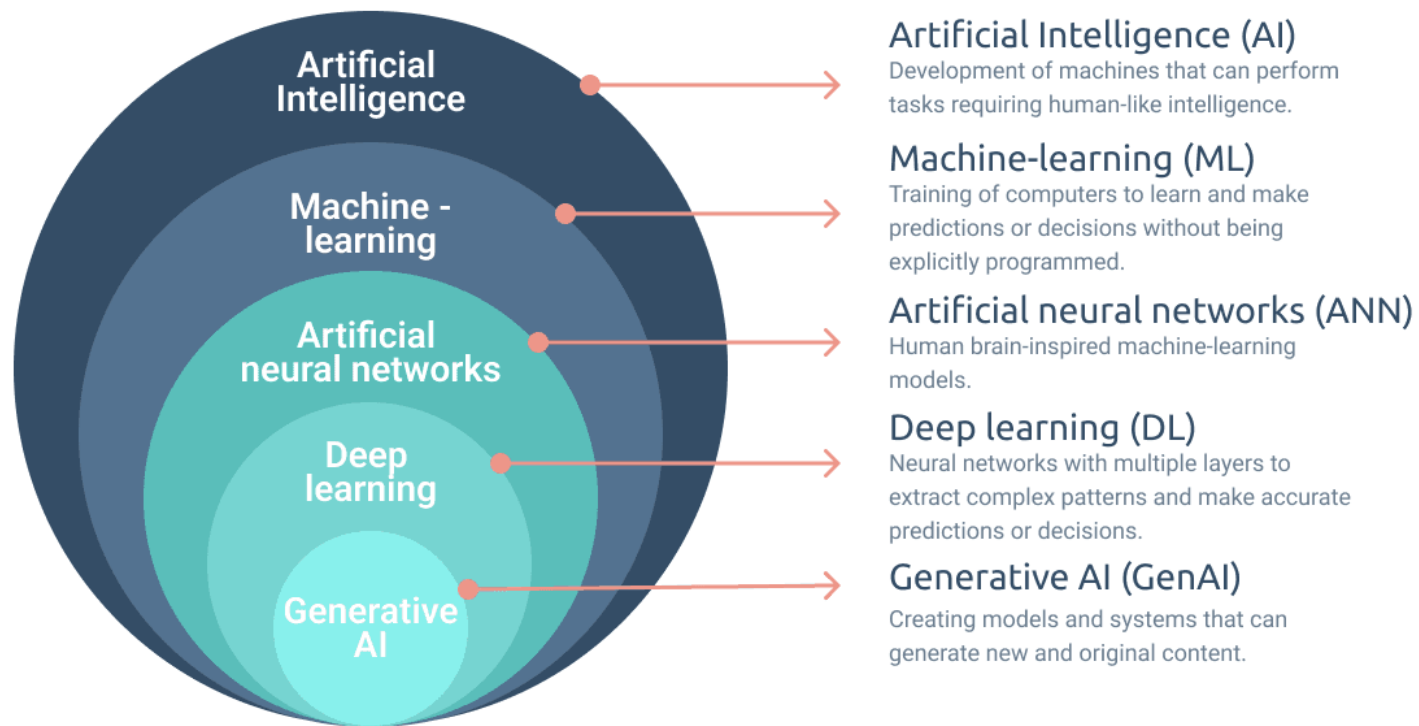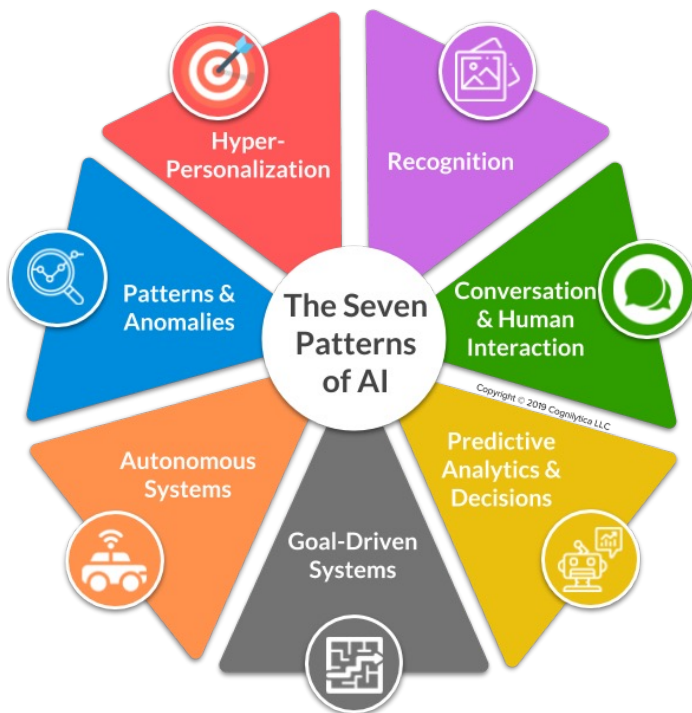# The Relationship Between AI, ML, and Deep Learning

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Image 2. AI subsets

Artificial Intelligence (AI)
Development of machines that can perform tasks requiring human-like intelligence.

Machine-learning (ML)
Training of computers to learn and make predictions or decisions without being explicitly programmed.

Artificial neural networks (ANN)
Human brain-inspired machine-learning models.

Deep learning (DL)
Neural networks with multiple layers to extract complex patterns and make accurate predictions or decisions.

Generative AI (GenAI)
Creating models and systems that can generate new and original content.

Source: engenome.com

Seven AI Patterns: Unlocking the Power of Artificial Intelligence

Source: Cognilytica (PMI)

1 Conversation

Build intelligent chatbots and virtual assistants for seamless customer interactions.

2 Recognition

Enable AI systems to identify and interpret patterns in images, speech, and text.

3 Autonomous Systems

Create intelligent systems capable of making independent decisions and taking actions.

4 Hyper-Personalization

Deliver personalized experiences and recommendations based on individual preferences and behaviors.

5 Patterns & Anomalies

Utilize AI algorithms to uncover hidden patterns and insights from large datasets.

6 Predictive Analytics

Harness AI models to forecast future outcomes and make data-driven predictions.

7 Goal-Driven Systems

Develop AI systems that can understand goals and take actions to achieve them.

What's Different in AI Projects?

Find **5** differences

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AI Development is NOT Software Development

- **Deterministic vs Probabilistic**
- **Unpredictable Data Dependencies**
- **Rapidly Evolving Scope**
- **Data, Data, Data…It's all about Data!**
- **Changes, Drifts, Hallucinations, "Creepy" factor**
- **Team skills/composition**
- **Ethical, Societal, Training Data Bias**

The Hype, Fears, and Expectations (usually unrealistic)

Fast moving landscape of tools, platforms, Language Models, vendors

More work in Operations than in Development

What's the Same in AI Projects?

- Identifying the Problem that needs to be solved

- Understanding the outcomes that need to be achieved to deliver value

- The need to break problems down and prioritize work

- Quality practices and customer/user feedback loops are critical

- Need support from leadership

- Need a great team with a strong desire to experiment and learn

The Importance of Scrum in AI Projects

Iterative Development

Scrum is highly effective for managing AI projects due to its adaptive nature, allowing teams to respond to rapidly changing technologies and emerging project requirements in AI development.

Empowered Teams

Scrum emphasizes self-organization, accountability, and cross-functional collaboration within teams.

Customer Centric

Scrum prioritizes delivering value to the customer and seeks feedback for continuous improvement.
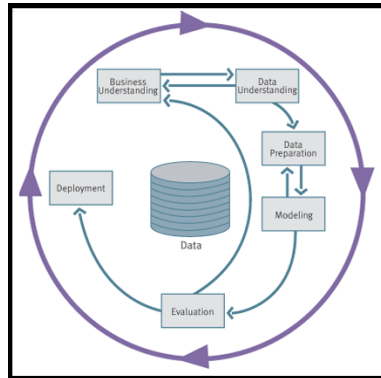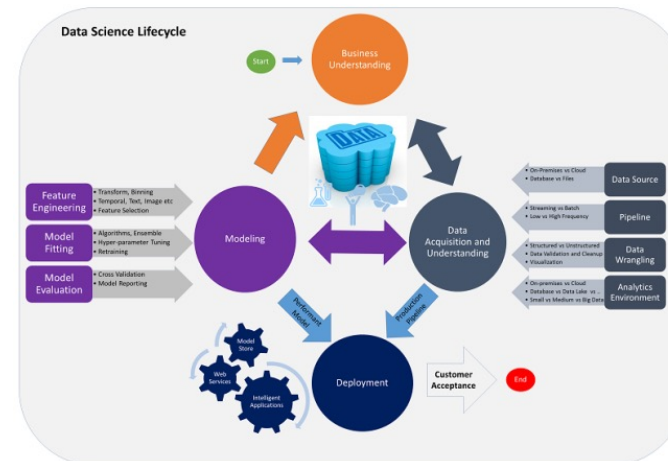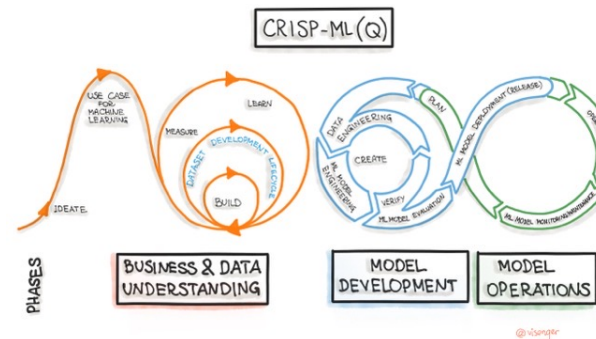
Adapting Scrum for Data-Centric Projects

- Extreme level of variability
- All AI is not the same
- Hard to define Epics, User Stories for data products
- Increased number of dependencies
- Targets and Goals for Sprints are fuzzy
- Team composition
- What is the product increment?
- Can anything be completed in a timeboxed Sprint?
- What is the Definition of DONE?
- Going to run a lot more "Spikes"

Popular AI Frameworks

- **CRISP-DM**
- **CRISP-ML(Q)**
- **CPMAI (Cognilytica)**
- **Team Data Science Process (Microsoft)**

AI/ML/Data Project Roles

SW Developer

Product Owner

Data Scientist

Design Lead

Data Quality Engineer

Data Engineer

Scrum Master

Machine Learning Engineer

Key Skills and Tools for AI Project Success

Essential Skills

Establishing and Communicating Project Context (Product Goal, AI PRD)

Goal Setting (Outcomes, OKRs)

Knowledge of AI Patterns

Understanding Data/Infrastructure Landscape

Accuracy, Performance, Cost Tradeoffs

AI / ML Operations

Productivity/Decision-making Tools

Cognitive/Data Methods (CRISP-DM, CPMAI, MS TDSP)

GenAI – ChatGPT, ChatPRD, MS Copilot, Gemini, etc.

Team Collaboration

Data Analysis

Prompt Engineering

Ethical Considerations

Bias – Fairness Issues

Laws and Regulations

Security and Privacy

Human-In-The-Loop

Sometimes, by holding on too tight, you end up losing what you were trying so hard to save

Closing Thoughts....

Poem by ChatGPT (3sec); Video by HeyGen (1min)

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CSPO for AI Projects with Dr. Bob Schatz

(New!) Product Development for AI Workshop with Dr. Bob Schatz

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"Anybody Got Any Questions?"

Contact me for a free Consultation!

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