

Artificial Intelligence: The What, Why, and How

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“The volume and complexity of data that is now being generated is too vast for humans to process and apply efficiently and has increased the potential of machine learning, as well as the need for it.”

McKinsey & Company - What is AI (Apr. 3 2024)

Roadmap

- 1 AI Crash Course – What
- 2 Why Invest in AI – Why
- 3 Considerations – How

AI Crash Course

(Like, super crash course)

Terms to Know ... or Learn



Basics

AI

Computer systems performing tasks typically requiring human intelligence. Requires adaptivity.

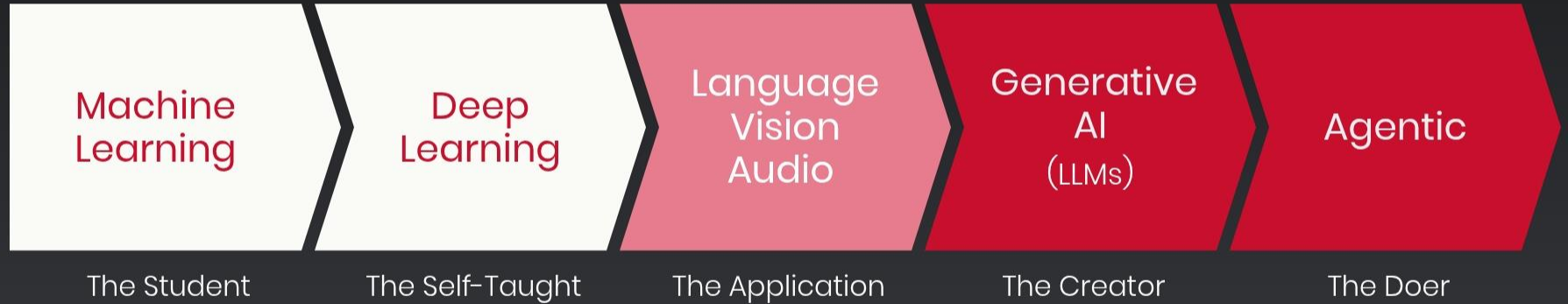
Automation

Technology that follows preset rules to do repetitive tasks. No adaptivity.

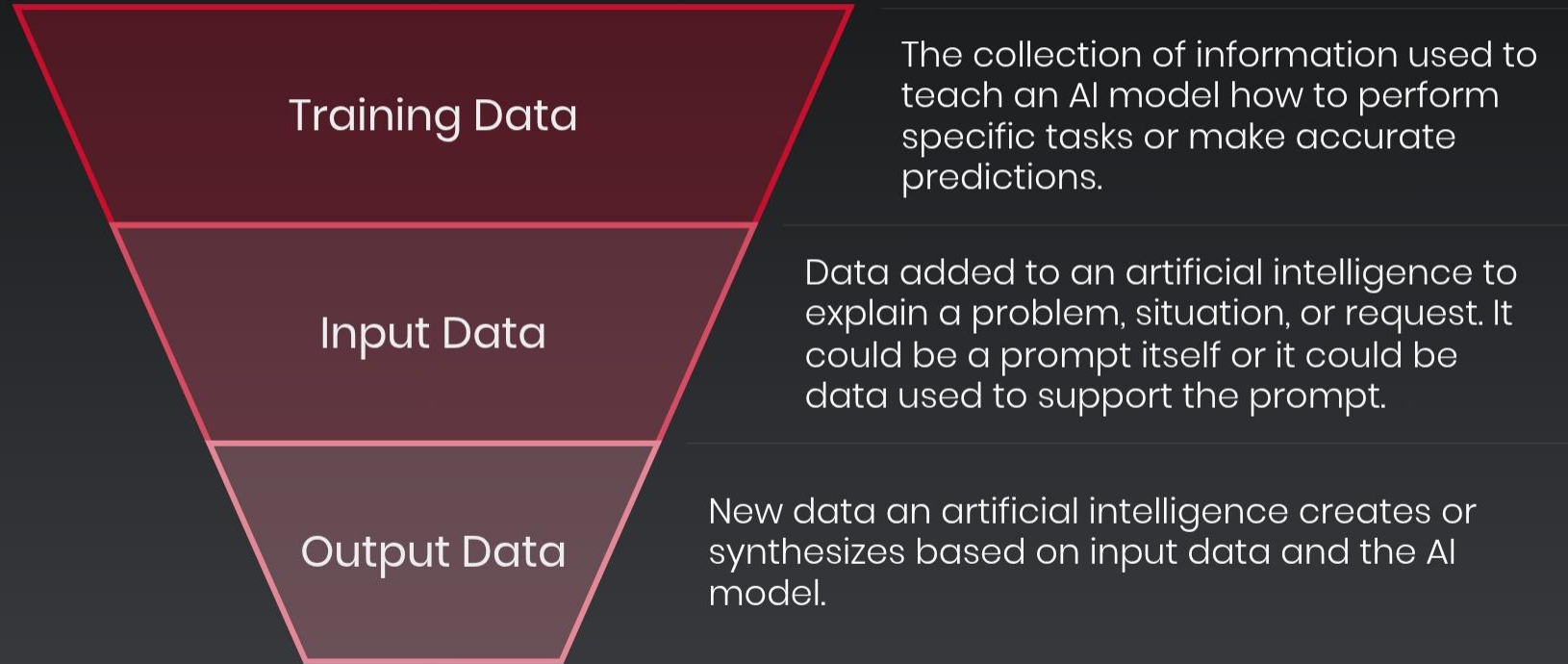
Models

Set of mathematical instructions that tells an AI system how to process and make decisions. The "Brain".

Types of AI



Types of Data



Policy & Governance



Audit Trail

Record of decisions, inputs, and processes for accountability and verifying compliance .



Algorithmic Bias

Biased training data or flawed design produces skewed results-- can discriminate against people



Human-in-the-Loop

Keeping human oversight and decision-making authority in AI processes.



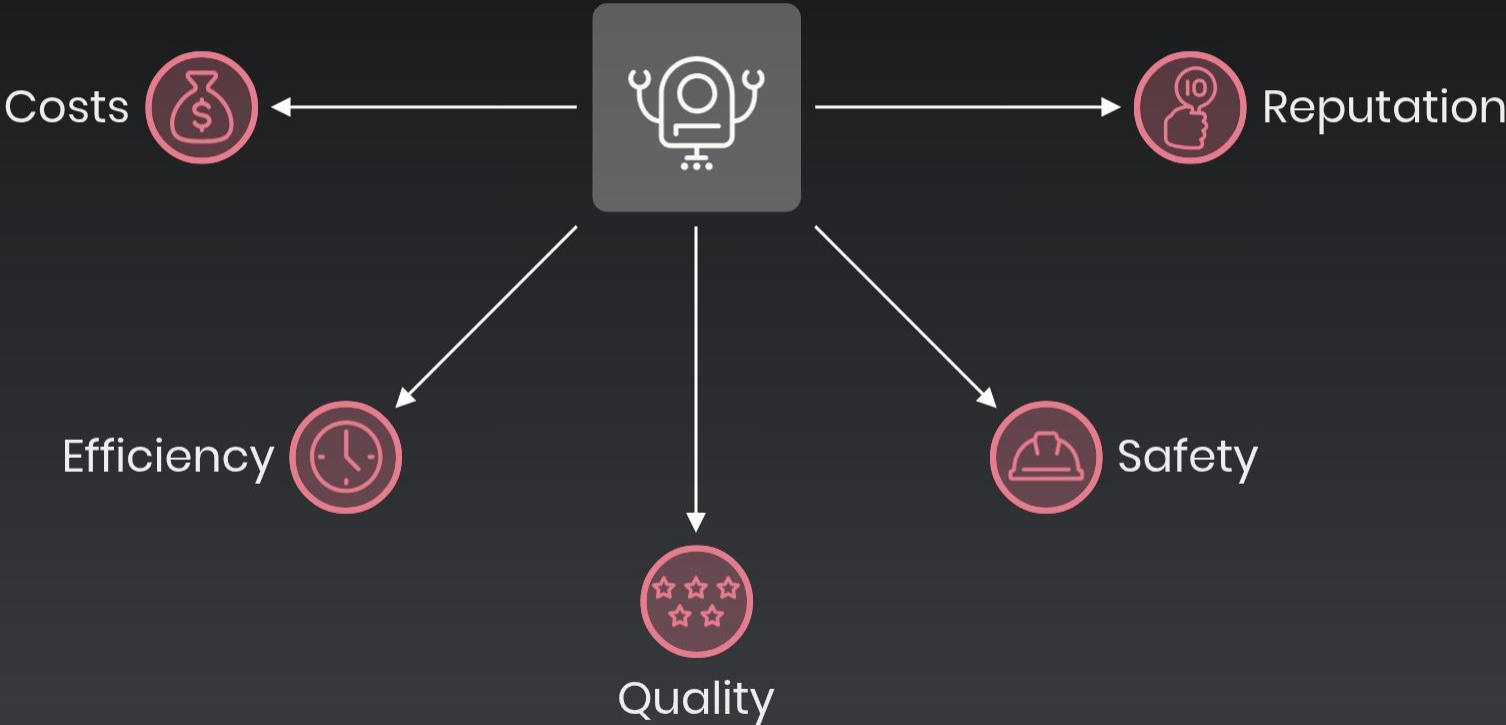
User License Agreement

Contract for use of AI software. Key terms include what data the vendor can access and owns.

Why Invest in AI

(Hint: Your competitors are doing it, your customers will demand it, and your future workforce will expect it.)

Potential Benefits



AI in Construction

Pre-Construction

- Automated Quantity Takeoffs
- Optimized Bid Pricing
- Better and Quicker Bid Presentations

Project Mgmt.

- Optimizing Schedules
Risk Management
- Resource Optimization
- Supply Chain Management

Quality Control

- Predictive Maintenance
- Real-Time Site Monitoring
Automated Inspection

Safety

- Predictive Analytics
- Real-Time Hazard Detection
- Wearable Technology
- Compliance Checks

Your Competitors Are Using AI

AI in Global Market by 2030

\$1.81 tn ↑ 35.9%

Horizon Grand View Research

AI in US Construction by 2029

\$7.21 bn ↑ 33.2%

The Business Research Company, 2025

AEC Using AI

74%

Construction Dive, Nov. 2024

AEC to Increase AI Budget

84%

Construction Dive, Nov. 2024

Future Workforce

84%



Students Report Using AI in Studies

54%



Students Report Using AI Weekly

24%



Students Report Using AI Daily

Digital Education Council, Aug. 2024

**Your customers
are going to start
demanding you
use AI.**

Considerations

(Know the risks, strategize, implement, and execute.)

Risks

Business

Financial

Competition

Customer Relationships / Reputation

Operational

Safety

Quality Control

Skill Atrophy / Over Reliance

Legal

Next Slide

Third Party

Vendor Reliability

Vendor Sustainability

Vendor Vulnerabilities

Legal Risks

Negligence

- Improper Use
- Failure to Use (?)
- Algorithmic Bias
- Agent(ic) Liability
- Nondelegable Duty

Contractual

- Failure to Disclose Use of AI
- NDAs

Statutory

- TRAIGA / CUBI
- IP / Trade Secrets
- HIPPA
- Cross-Borders (?)

**Be cautious, but not
closed minded.**

Strategize

Purpose

Why does your specific company want to invest in AI?

Have the end in mind from the beginning?

Culture

Is your executive leadership fully committed or is it fractured?

Fully commit or don't commit.

Policy

Have you implemented AI Policies and what do they look like?

Even if you don't use AI, have a policy.

**Strategize with
purpose.**

Implementation

Research AIs

Type of AI, Pros and Cons of AIs, Costs of AIs, Contract Terms of AIs, Intergration.

Objective Benchmarks

Set clear baseline metrics to determine if AI is valuable.

Train

Train testers on AI so they can be effective when using AI from start.

Decide

Based on feedback and other information decide.

Testers

Identify varied testers who will commit to pilot program for AI.

Duration

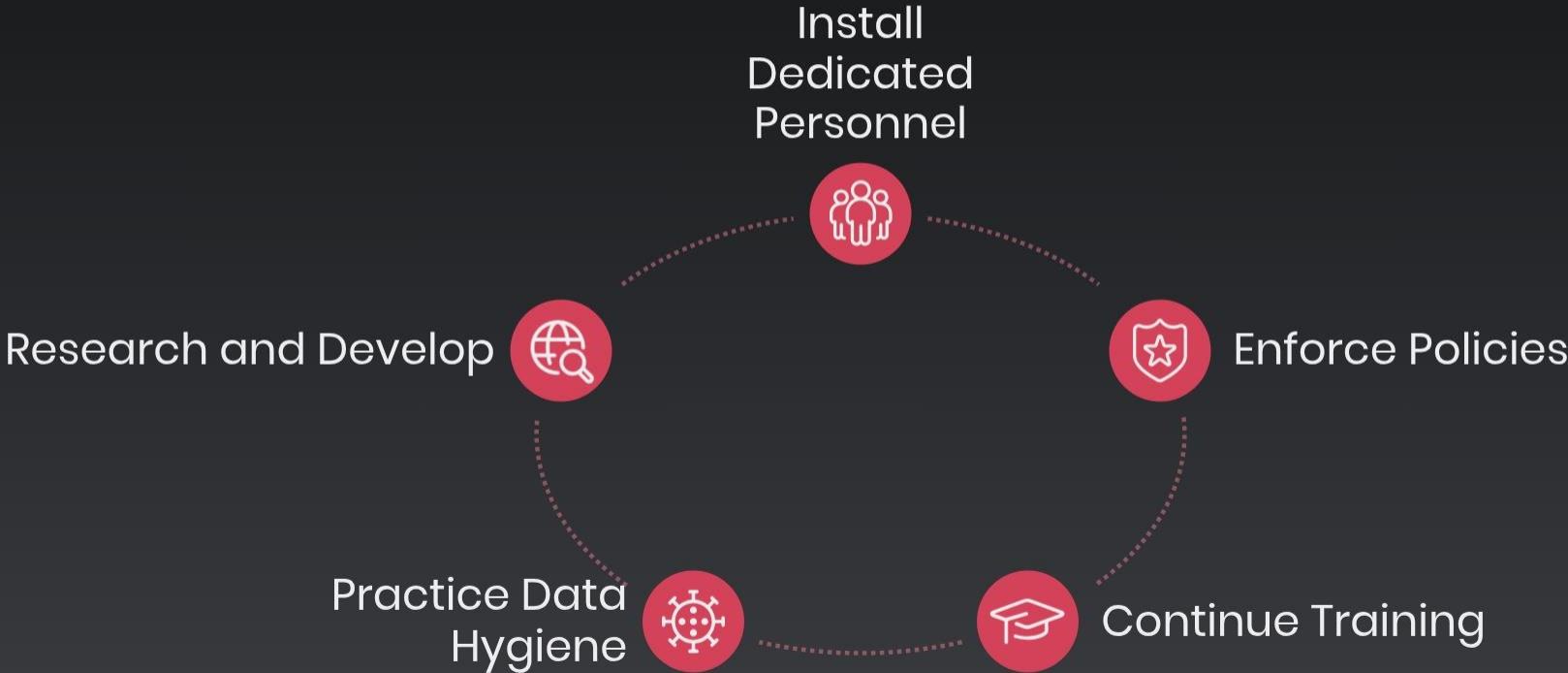
Need enough time for testers to use AI to know good and bad.

Feedback

Gather feedback from all testers. Combine multiple choice, ranking, and narrative responses.

Implement
intentionally.

Execution Considerations



**AI is rapidly
evolving;
so must
you.**

Continuing Education

(After 25 minutes, you're not an expert. You still have a long way to go.)

Good Resources to Learn

① Experiment
ChatGPT (Paid)

② Podcasts
AI Daily Brief (News / Analysis)
AI in Business (Application)
AI Podcast (Learning)

③ Online Courses
AI For Everyone (DeepLearning.ai - Beginners)
Coursera Website (Tons of Courses)

Takeaways on AI

The What

1. Adaptive Computer Performing Human-like Tasks
2. Tool Allowing Better Use of Time
3. The Future of Business

The Why

1. Improve Your Work
2. Competitive Edge
3. Recruit Future Talent
4. Meet Client Demands

The How

1. Analyze Risk (4 Pillars)
2. Strategize (Purpose)
3. Implement (Intentional)
4. Execute (Maintain/Adapt)



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