integral INSIGHT FOR AN EVOLVING WORLD

Artificial Intelligence in the Environmental Industry

Future-Proofing AI in Environmental Science

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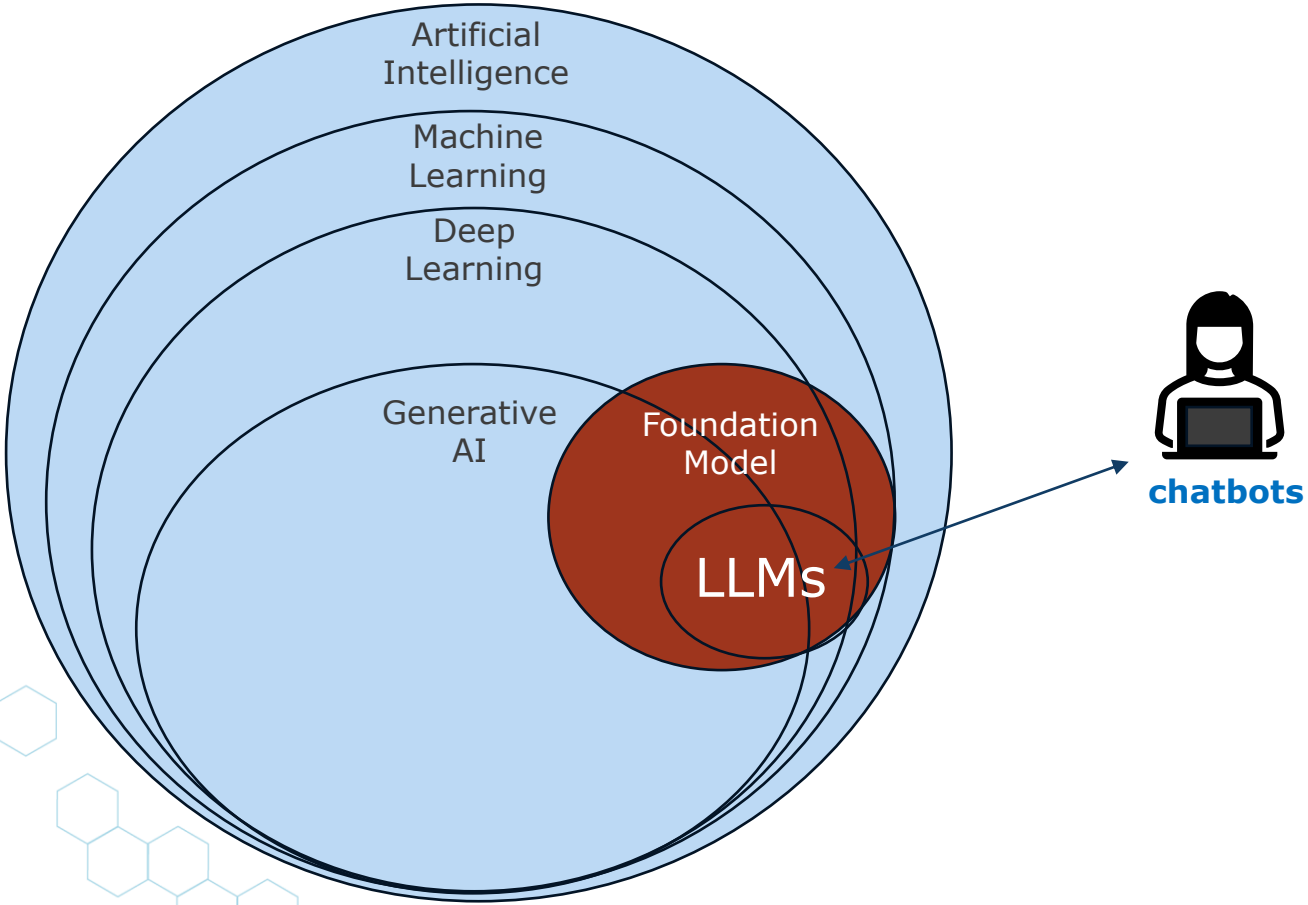
15-Minute Session Goals

SOME IMPORTANT TECH CONCEPTS

A FEW BIG IDEAS

Core Concepts



Key Players

FALL 2022

ChatGPT

FALL 2022

Perplexity

SPRING 2023

Bard rebrands to Gemini

SPRING 2023

Claude

SPRING 2023

Bing Chat rebrands to Copilot

Llama and Grock models

Large Language Model Limitations

Generic Responses

Generally answers are surface-level or repetitive

Positive Bias

AI favors positive or neutral responses—and is reluctant to challenge you

Outdated Training Data

AI tools default to accessing information 6–12 months out of date

Lack of Reasoning

AI can provide conclusions without strong logical reasoning and can hallucinate

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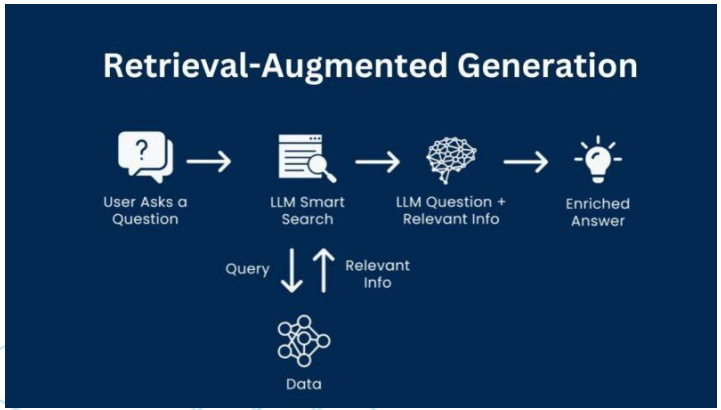
RAG

- Retrieval-Augmented Generation
- Bridges the gap between an AI's static training data and real-time, specific information
- Up-to-date, context-specific answers



DALL-E IMAGE STYLE PROMPT: SOLARFLARE

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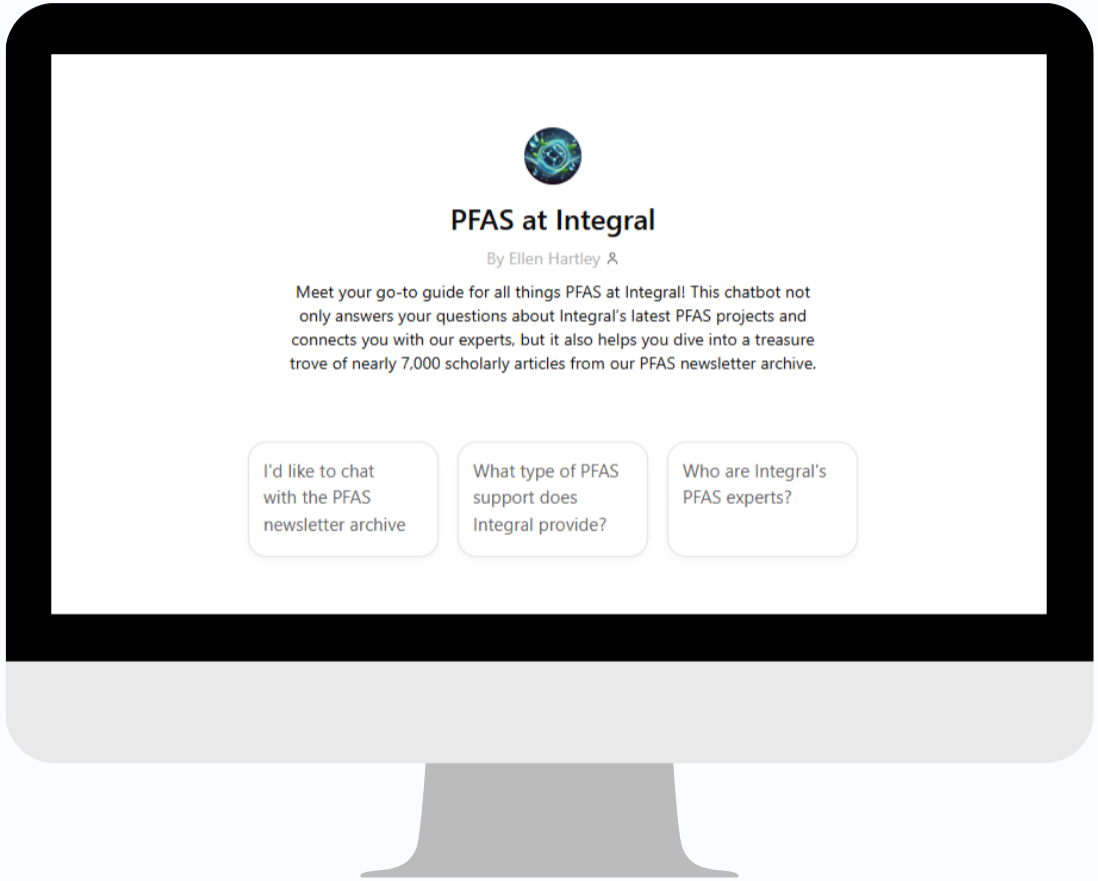
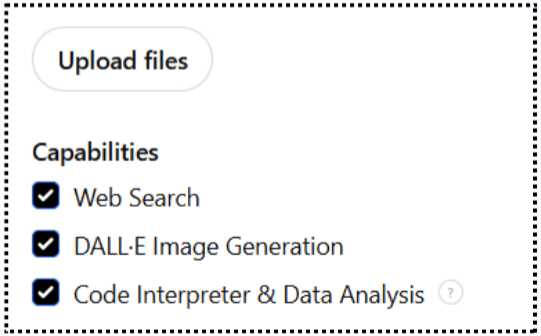
Custom Chatbots





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Agents

- Capable of autonomously perceiving its environment, making decisions, and performing specific tasks to achieve goals, while learning and adapting over time
- The agentic approach is becoming the standard in AI development

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MIDCENTURY MODERN

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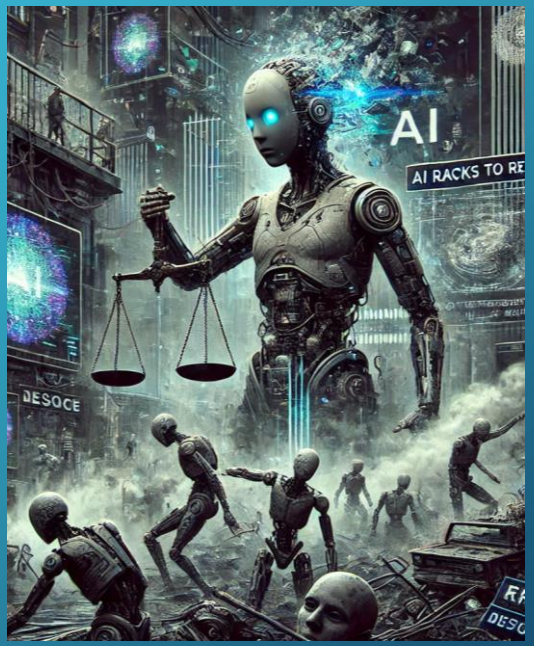
Reasoning

- Reasoning as the next frontier
- Implications: enhanced problem-solving and decision-making, improved environmental monitoring and forecasting, accelerated scientific discovery, policy development and compliance
- Challenges: energy consumption, bias and misinformation, ethical concerns



DALL-E IMAGE STYLE PROMPT:
DYSTOPIAN FUTURE

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Ethics

- Privacy
- Hallucinations
- Bias

SAMPLE PROMP

Analyze the following AI-generated text for potential hallucinations or inaccuracies:

[Paste AI output here]

Identify any claims or statements that seem questionable or lack proper context. Point out any inconsistencies within the text.

1.Highlight any information that appears to be factually incorrect based on common knowledge.
2.Note any areas where the AI might be speculating without clearly indicating so.
3.Suggest specific points that would benefit from further verification or fact-checking.

For each point you identify, please explain your reasoning and, if possible, provide a confidence level for your assessment (low, medium, or high).

DALL-E IMAGE STYLE PROMPT: SUPERHERO

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Why Future-Proofing Matters in AI

Understand Core Principals

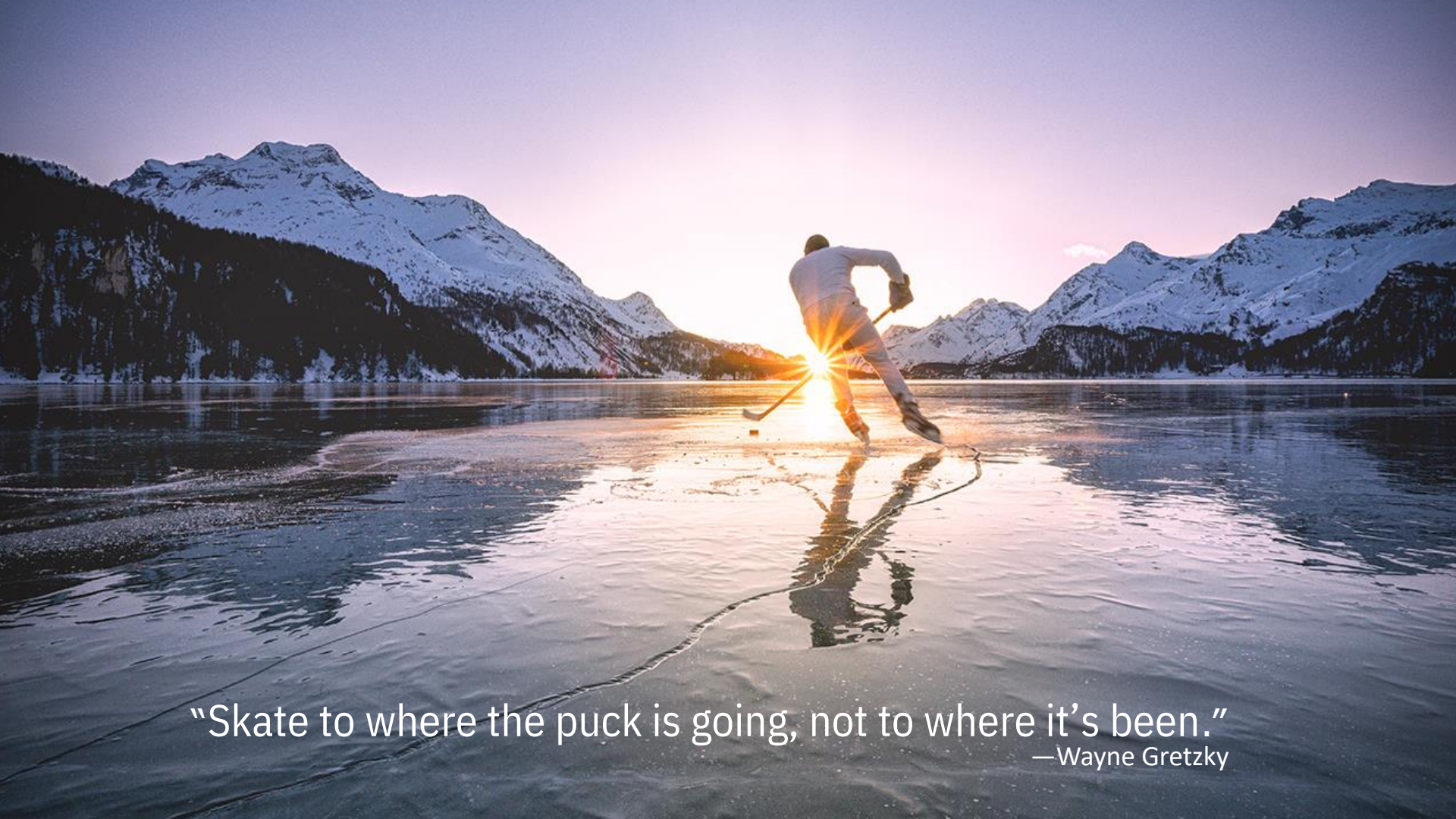
Having a solid understanding of AI fundamentals (e.g., machine learning, data ethics) gives you the flexibility to adapt as technologies and approaches continue to evolve.

Embrace Change

View AI advancements as opportunities to enhance skills and capabilities rather than threats.

Design for Flexibility

Whether building AI systems or personal skills, be sure they can evolve with technological progress.


“Skate to where the puck is going, not to where it’s been.”
—Wayne Gretzky

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