All Things AI

June 27, 2023   2:15-3:30pm

**Lily
Lim**
Fortive
AGC, IP &
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**Chip
Lutton**
C3.ai
former GC

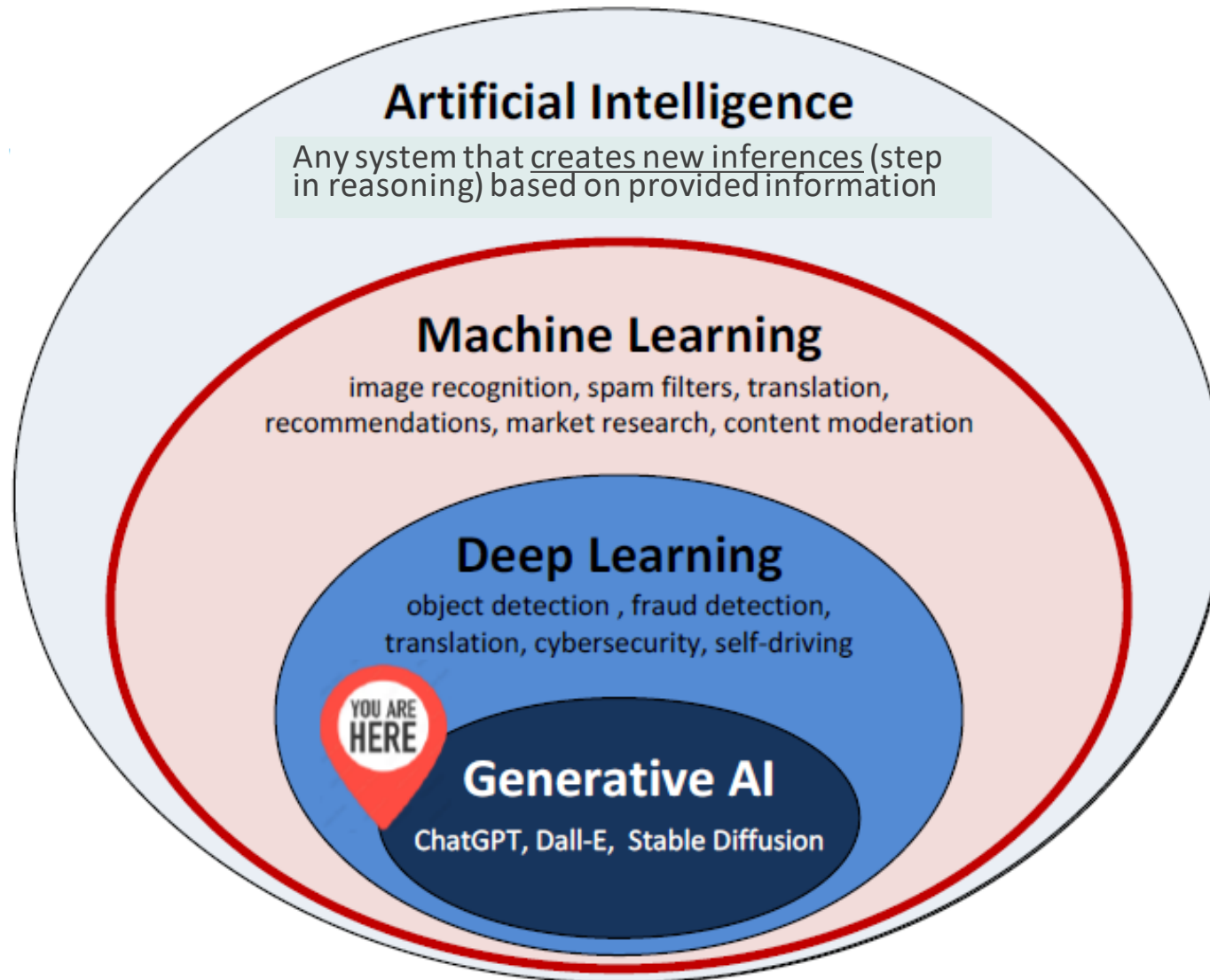**Dr. Geoffrey
Morgan**
Fortive
Director,
Data Science &
AI

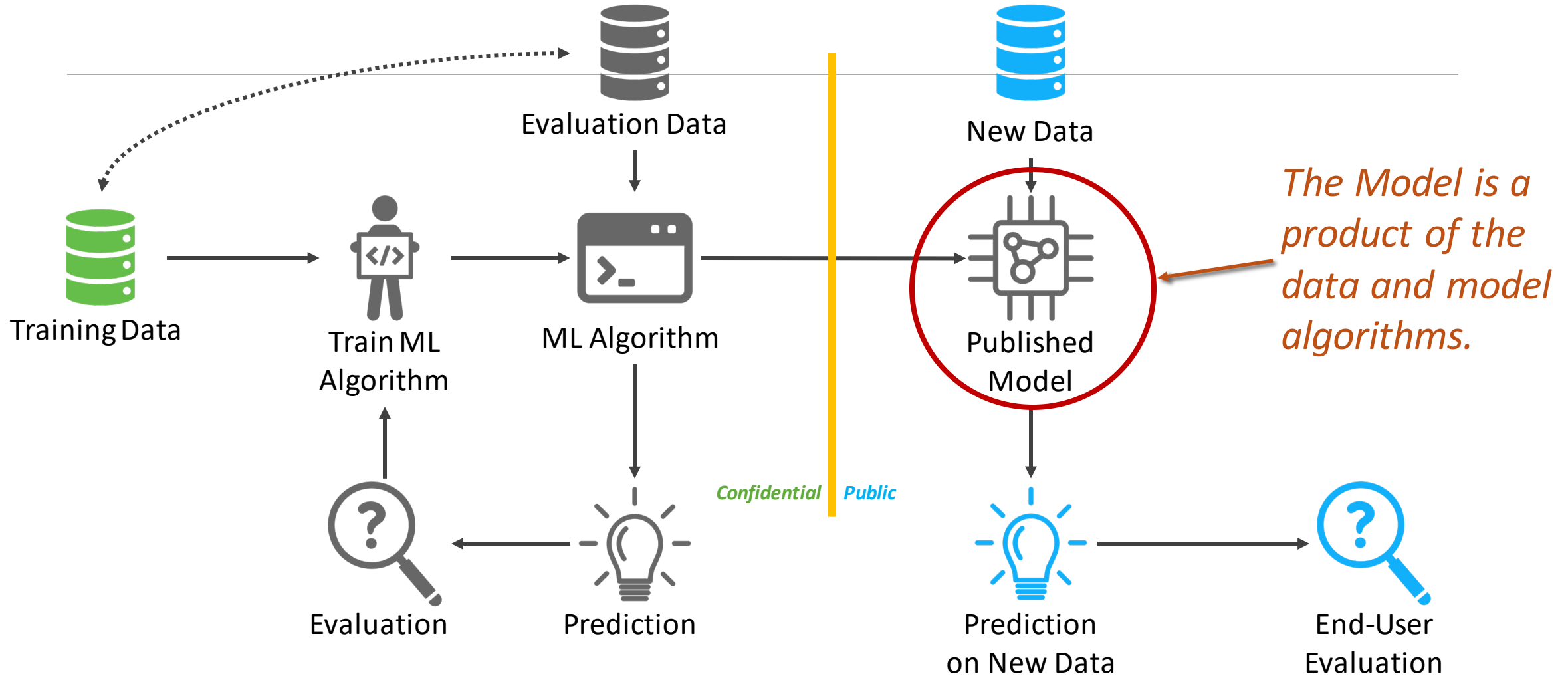**Meredith
Schoenfeld**
USPTO
Associate
Solicitor

Artificial Intelligence

Artificial Intelligence

Any system that creates new inferences (step in reasoning) based on provided information

Machine Learning

image recognition, spam filters, translation, recommendations, market research, content moderation

Deep Learning

object detection , fraud detection, translation, cybersecurity, self-driving

YOU ARE HERE

Generative AI
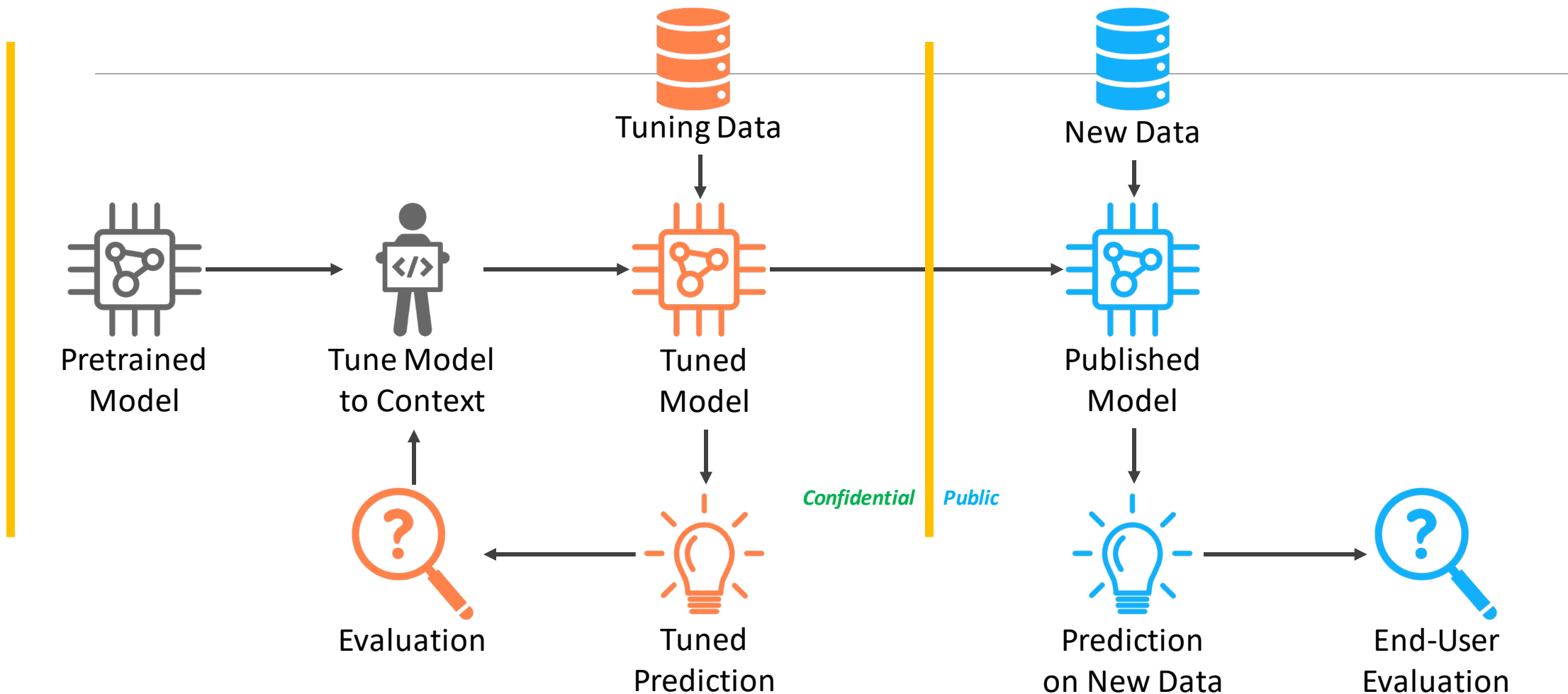
ChatGPT, Dall-E, Stable Diffusion

What is Generative AI?

Generative AI's Large Language Models (like ChatGPT) are fundamentally predictive text models that select the next word based on what is dimensionally closest to the one before it.

How Machine Learning Models are Trained

The Model is a product of the data and model algorithms.

Training Data

Train ML Algorithm

ML Algorithm

Evaluation Data

New Data

Published Model

Confidential | Public

Evaluation

Prediction

Prediction on New Data

End-User Evaluation

Further Tuning and Transfer Learning

Tuning Data

New Data

Pretrained Model

Tune Model to Context

Tuned Model

Published Model

Confidential   *Public*

Evaluation

Tuned Prediction

Prediction on New Data

End-User Evaluation
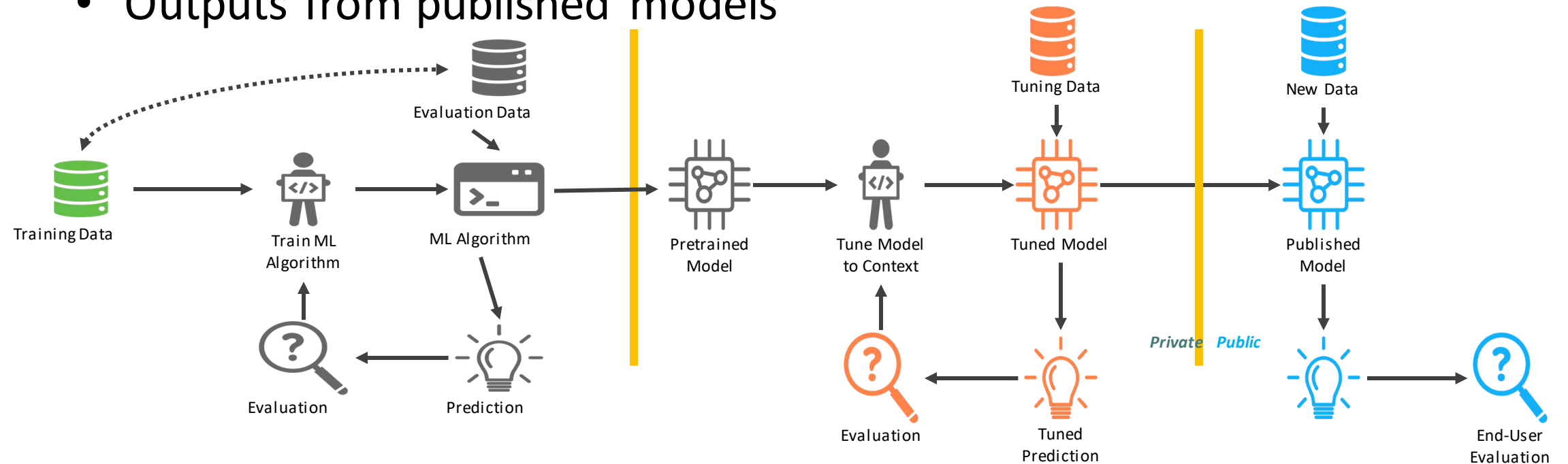
Generative AI: New Types of Risks

- Hallucinations
- Propagation of biases

- Operational issues
  - Business values, priorities and culture
  - Tools and information usage
  - Contractual compliance, including TOS
  - Customer expectations (transparency)

- Safety
- Data Security
- Data Privacy
- Leakage of corporate/ customer information

USPTO AI policy developments

- USPTO: AI issues

    - AI Inventorship:
        - Listening sessions summaries
        - What is the patentable human contribution?

    - AI and Obviousness:
        - Prior Art in view of AI?

    - AI policy:
        - AI writing patent applications
        - AI tools at the USPTO

AI Inventorship & Ownership Issues

- Ownership & Inventorship of:
  - Data used to train and tune models
  - Data submitted to published models
  - Prompts
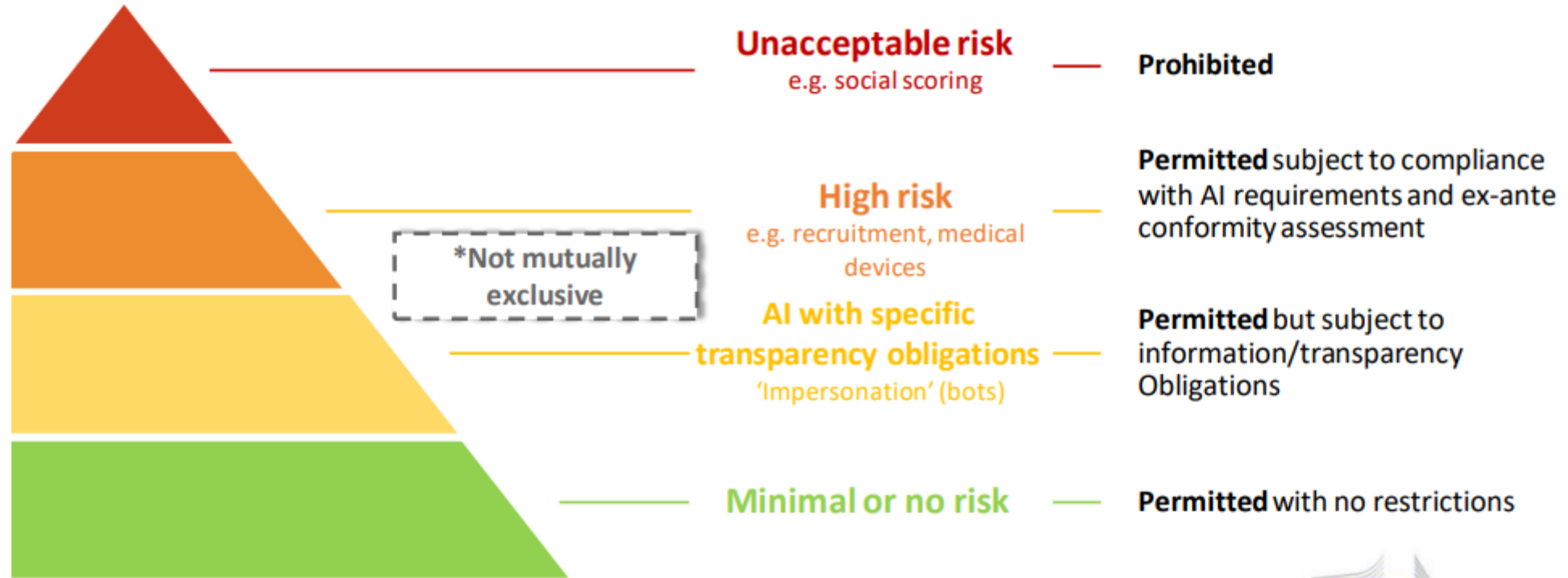 - Outputs from published models

AI Copyright Issues

- Copyright:
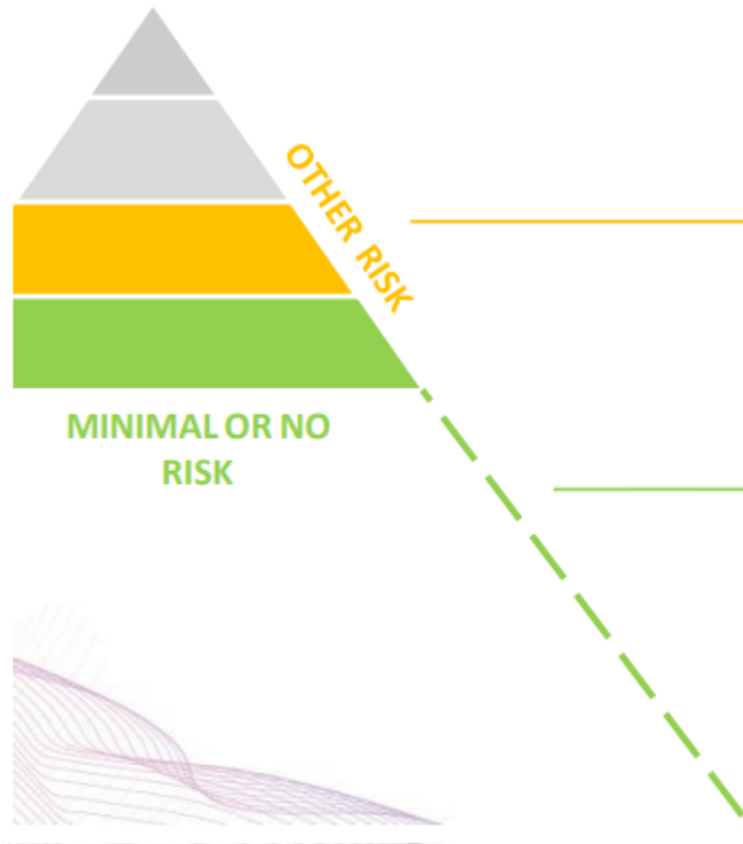 - AI cannot be author
  - Fair Use?

EU AI Act

A risk-based approach to regulation

Unacceptable risk
e.g. social scoring
— **Prohibited**

High risk
e.g. recruitment, medical devices
— **Permitted** subject to compliance with AI requirements and ex-ante conformity assessment

AI with specific transparency obligations
'Impersonation' (bots)
— **Permitted** but subject to information/transparency Obligations

Minimal or no risk
— **Permitted** with no restrictions

*Not mutually exclusive

European Commission

EU AI Act

Most AI systems will not be high-risk (Titles IV, IX)

OTHER RISK

MINIMAL OR NO RISK

New transparency obligations for certain AI systems (Art. 52)

▶ **Notify humans** that they are **interacting with an AI system** unless this is evident

▶ Notify humans that emotional recognition or biometric categorisation systems are applied to them

▶ Apply **label to deep fakes** (unless necessary for the exercise of a fundamental right or freedom or for reasons of public interests)

Possible voluntary codes of conduct for AI with specific transparency requirements (Art. 69)

▶ No mandatory obligations

▶ Commission and Board to encourage drawing up of codes of conduct intended to foster the **voluntary application of requirements to low-risk AI systems**

EU AI Act

High-risk Artificial Intelligence Systems (Title III, Annexes II and III)

Certain applications in the following fields:

1 **SAFETY COMPONENTS OF REGULATED PRODUCTS**

(e.g. medical devices, machinery) which are subject to third-party assessment under the relevant sectorial legislation

2 **CERTAIN (STAND-ALONE) AI SYSTEMS IN THE FOLLOWING FIELDS**

✓ Biometric identification and categorisation of natural persons

✓ Management and operation of critical infrastructure

✓ Education and vocational training

✓ Employment and workers management, access to self-employment

✓ Access to and enjoyment of essential private services and public services and benefits

✓ Law enforcement

✓ Migration, asylum and border control management

✓ Administration of justice and democratic processes

European Commission

Questions?