

CIFA Summit on Water Infrastructure

Artificial Intelligence

Date: April 2025

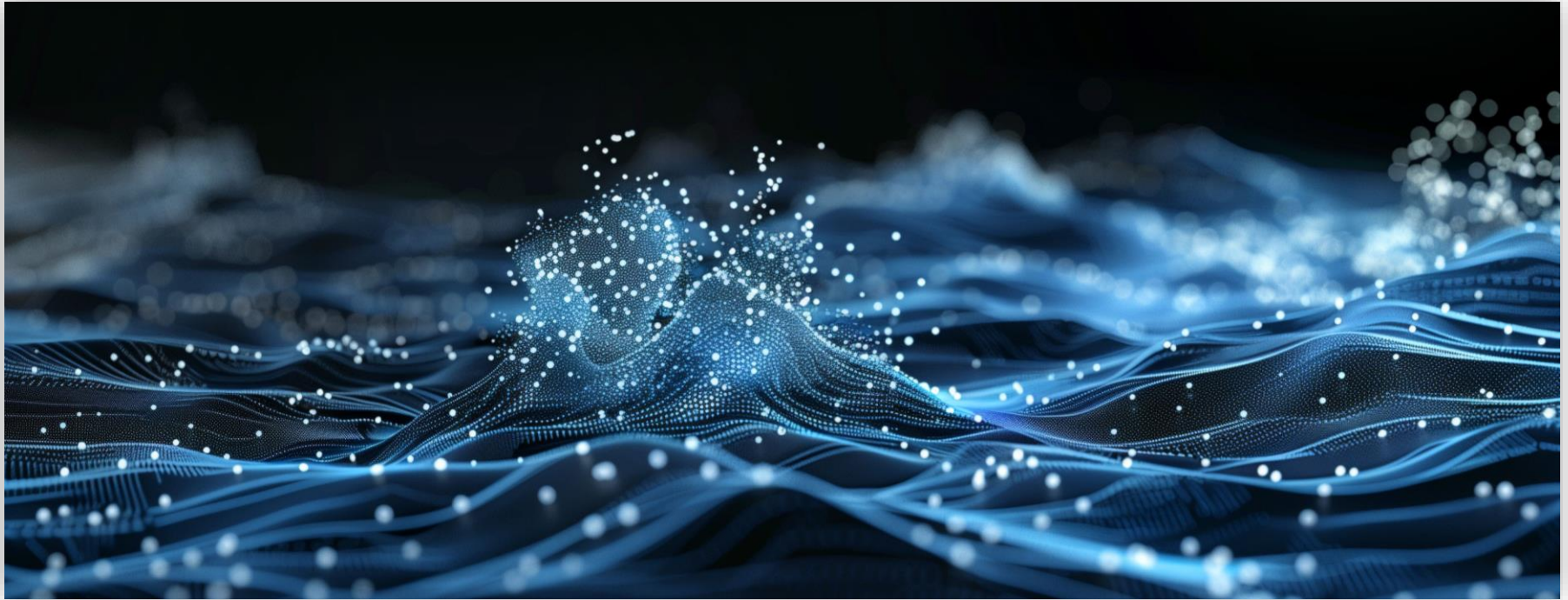


Definition

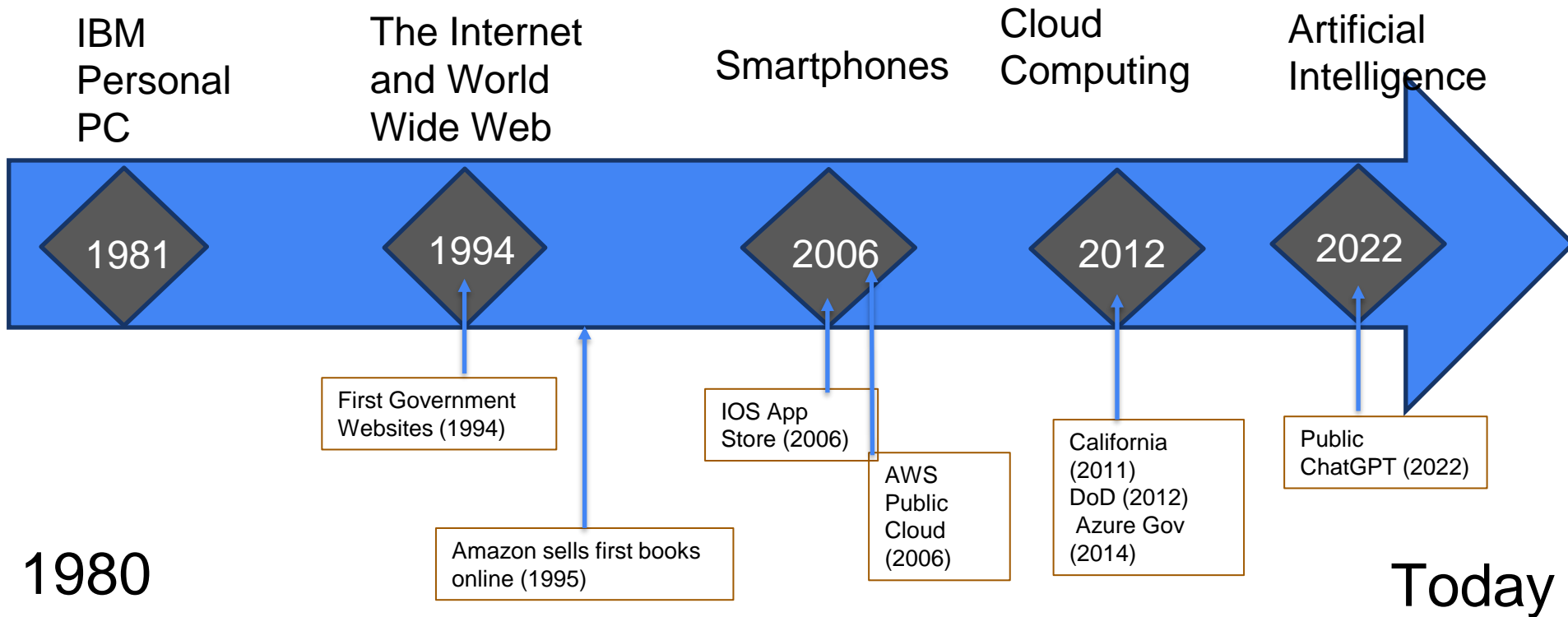
artificial intelligence (AI), the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings.



Why all the fuss about AI now?



Adoption of Digital Technology



AI in Government

70%

Of governments will use AI to enhance human administrative decision-making by 2026

Source: Gartner, Top Business Trends in Government for 2024

AI in Water and Public Agencies



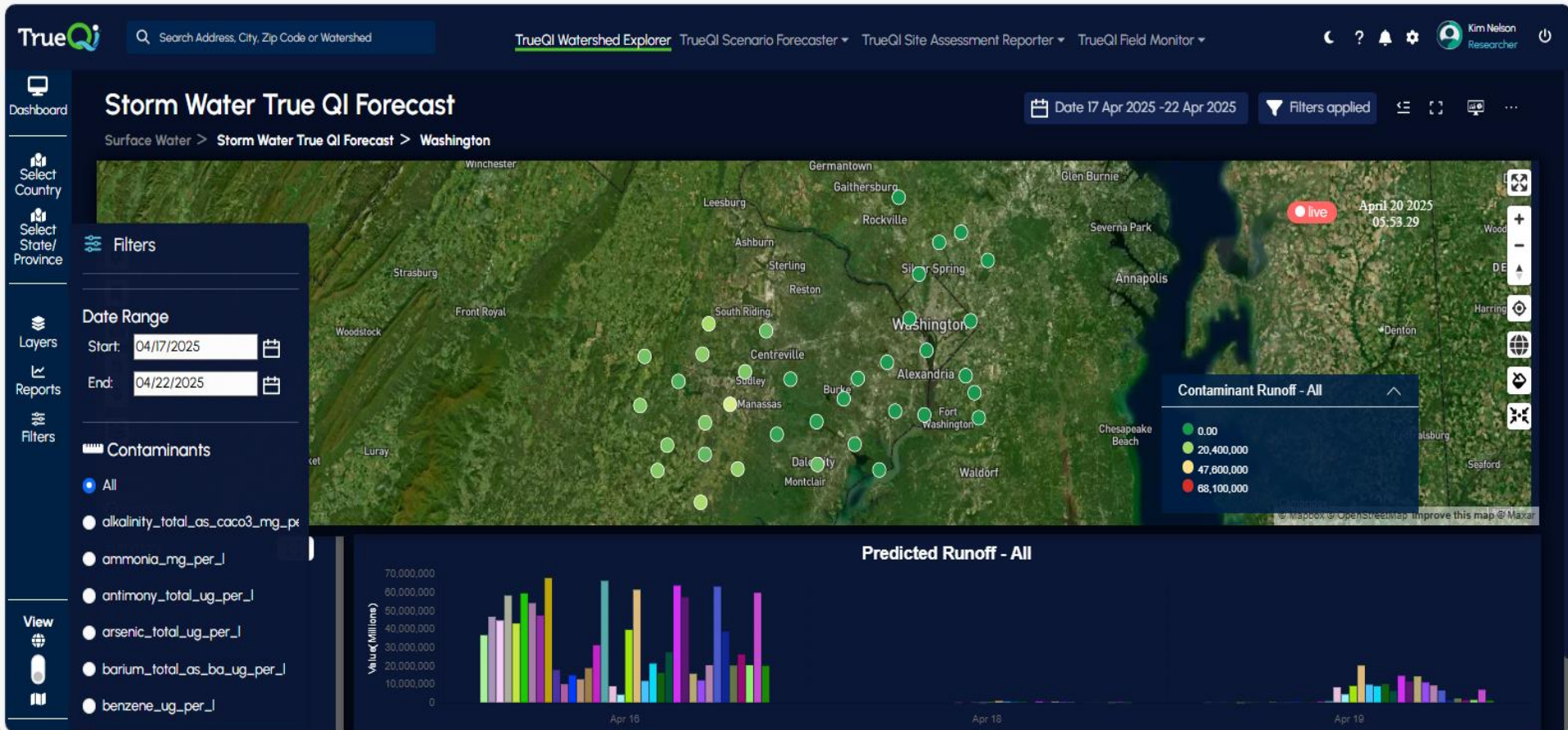
Understanding
Water Risk

Enhancing
Water
Efficiency

Protecting
Water
Resources

Enhancing
Citizen
Experience

Understanding Water Risk Through AI





Enhancing Water Efficiency

Protecting Water Resources

TrueQⁱ

Search Address, City, Zip Code or Watershed

TrueQⁱ Watershed ExplorerTrueQⁱ Scenario ForecasterTrueQⁱ Site Assessment ReporterTrueQⁱ Field Monitor

Dashboard

Select Country

Select State/Province

Layers

Reports

Filters

View

TrueQⁱ Scenario Forecaster > Riverine Stress > Brandywine Parkway, West Chester, Pennsylvania 19380, United States

Enter Target HUC8 Location02040202Process Location

Select ModelRain Year TypeSimpleRandomSpecific Year?

Select Future Year of Interest2041

Select Climate ScenarioSSP245SSP370SSP585?

Current Model Base1991-2020Model Year Precipitation45.43 in.Year of Interest Precipitation (2041)49 in.

Seasonal Impact

Stream SegmentsSegment Info

COMIDWarning Level44945920

Stream AnalysisPrecipitation ChangeSeasonal ImpactFlow DurationGroundwater Recharge

Select HUC12 for detailed Reach Analysis020402020603 East Branch Chester Creek

Potential Erodibility Warning Level

- 0: Very Low
- 1: Low
- 2: Moderate
- 3: High
- 4: Very High

Source: Generated with True Element's Scenario Forecasting Engine based on the Intergovernmental Panel on Climate Change (IPCC) NOAA

Risk Assessment by percentage of stream length

11%0%89%



Stream
Analysis



Precipitation
Change



Seasonal
Impact



Flow
Duration



Groundwater
Recharge

Risk Assessment
by percentage of stream length

11%

0%

89%

Select HUC12 for detailed Reach Analysis

020402020603 East Branch Chester Creek



Enhancing Citizen Services

Generative AI

- **Creates new content:** text, images, music, or code. It is designed to mimic human creativity.
- Uses machine learning models to analyze patterns and **generate output**
- ChatGPT and DALL-E **produce human-like text or images** responding to user prompts.

Key Feature: *Reactive*—it responds to user inputs to create something new. However, it doesn't "understand" the content it generates; it predicts outputs based on learned patterns.

Agentic AI

- Goal-oriented and designed to **act autonomously** to achieve specific objectives.
- Doesn't just create content; it **makes decisions, takes actions, and adapts** to changing environments.
- Autonomous vehicles or smart assistants that manage tasks without constant human input

Key Feature: *Proactive*—makes decisions and takes actions without human prompts, adapting to new situations.

Thank You!

Questions?



kinnels@trueelements.com





Water Intelligence