



WHERE AI FITS, WHERE IT DOESN'T,
AND WHY PEOPLE STILL MATTER

AI as a Force Multiplier in Data Management

PRESENTED TO: ICEDM 2026

PRESENTED BY: MEGHAN C. ESCHBAUGH, PE

Sustainability is our business

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Presenter



Meghan C. Eschbaugh, PE

Principal Consultant



Purpose & Outcomes

- 1 Recognize why strong **data governance** is the prerequisite for **trustworthy AI**
- 2 Identify where **AI adds value** through volume and repetition, and where **human judgment and expertise** is irreplaceable
- 3 Understand the **risks** of poorly governed AI and how to mitigate them
- 4 Discover practical, low-risk entry points for **integrating AI** into your workflows
- 5 Envision the evolving role from data manager to **data steward**

When a Helpful Paste Becomes a Leak

THE INCIDENT: SAMSUNG SEMICONDUCTOR, 2023

Within weeks of allowing ChatGPT, three Samsung engineers pasted **proprietary source code and confidential internal meeting notes** into the public tool to debug, optimize, and summarize their work.

Under the tool's terms at the time, prompts could be retained and used to train future models. The data was now outside Samsung's control and could not be recalled.

Samsung banned generative AI tools company-wide, joining a wave of firms doing the same.

Sources: The Economist Korea; Bloomberg; Forbes (Apr–May 2023).

TIME TO FIRST LEAK

20
days

GOVERN BEFORE YOU PROMPT

1. Use approved tools

Free or consumer AI tools may retain prompts as training data.

2. Classify before you paste

If it would need a sensitivity label in email, it needs one before the prompt.

3. Disclose AI assistance

Check client and regulatory requirements or AI clause before you publish.

4. Keep an audit trail

If you can't name the tool, the prompt, the input data, and the human reviewer, you can't defend or reproduce the output later.

Think about the last thing you pasted into an AI tool, was the tool approved, was the data yours to share, and could you reproduce the prompt if a client asked?

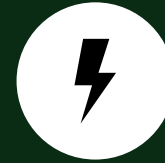
From Data Deluge to Decision Advantage

Why this matters now



MORE DATA

Labs, sensors, GIS, ESG, and decades of historical data all growing faster than our capacity to manage it.



MORE SPEED

Clients and regulators expect faster answers, with higher confidence and more transparency.



MORE SCRUTINY

Audits, litigation, and public reporting demand traceability for every number we publish.



MORE DEFENSIBILITY

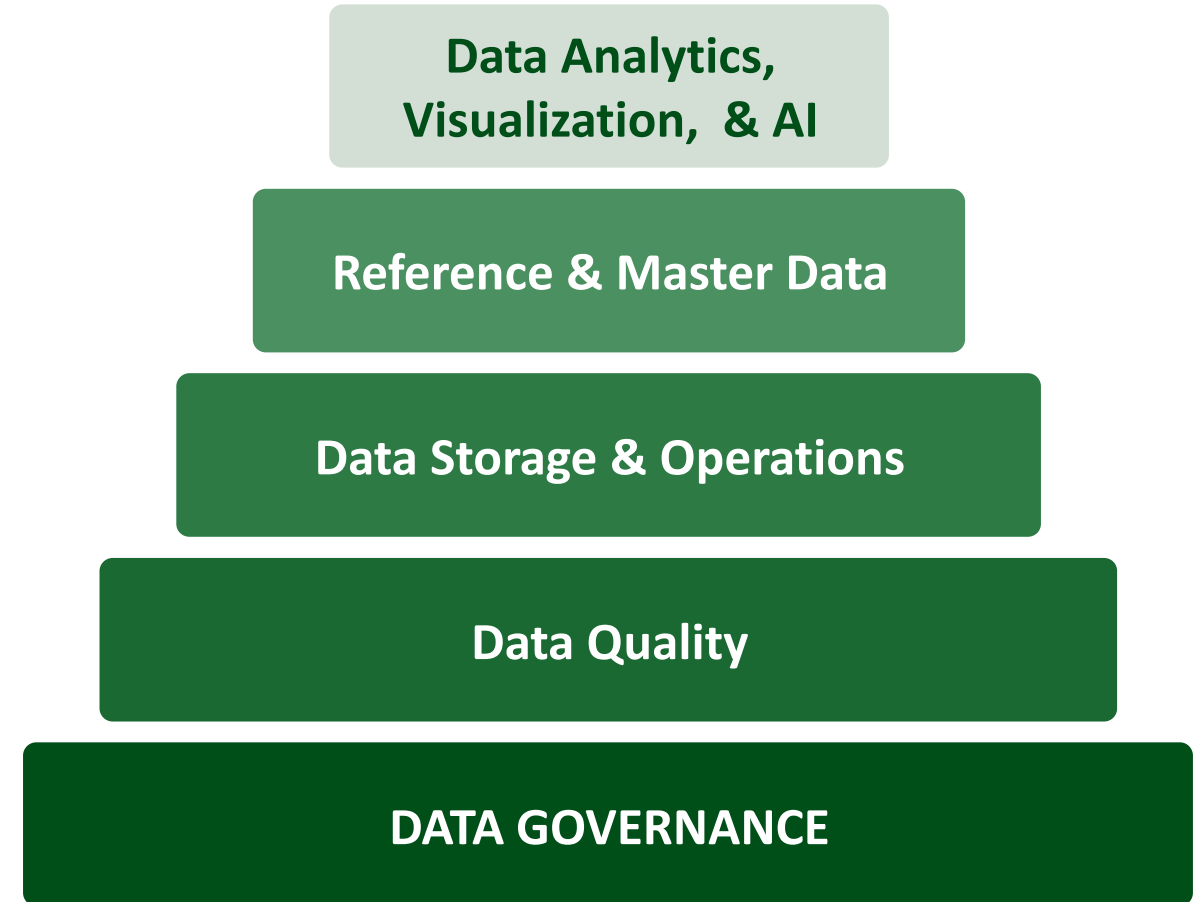
Higher confidence, complete lineage, and full documentation are now the baseline.

Build on a Foundation of Governance

Good data is the foundation for useful AI

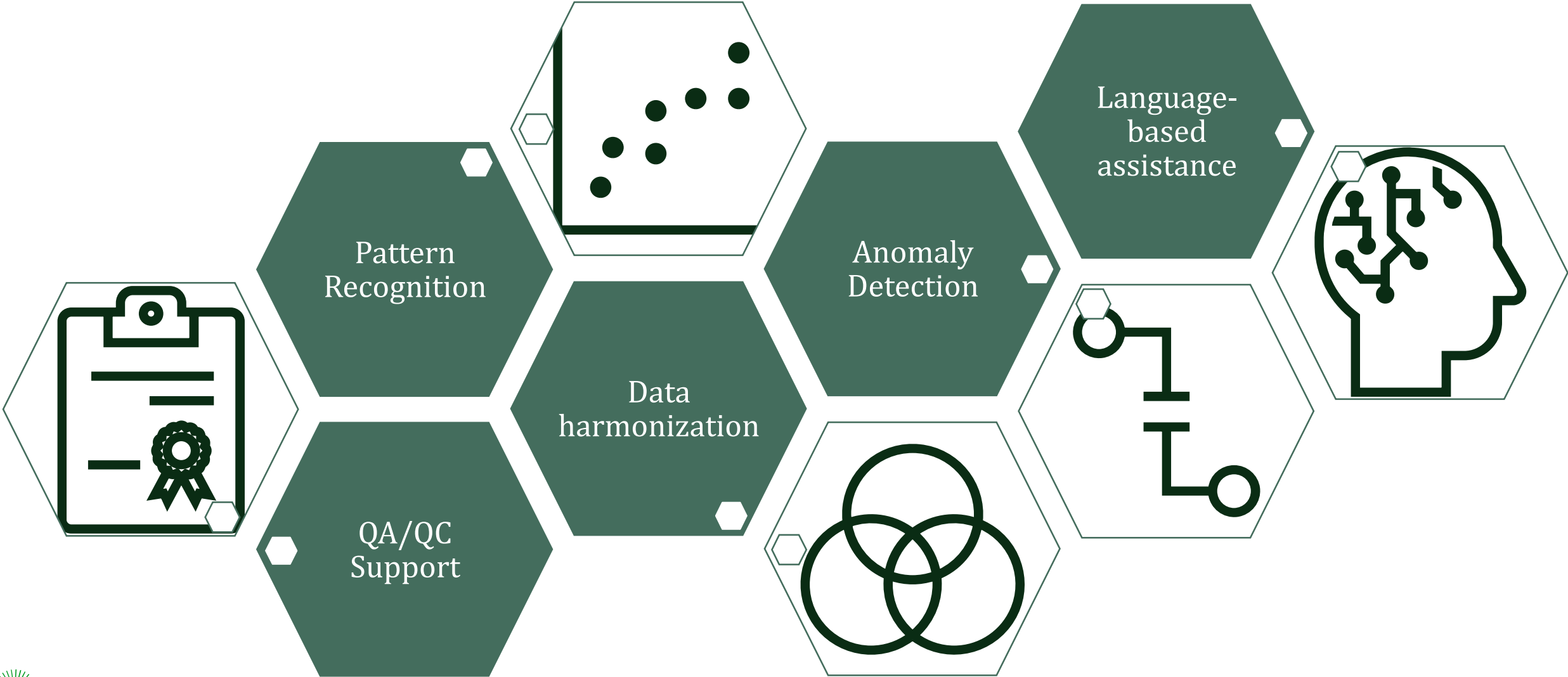
AI doesn't fix messy data — it inherits it

Governance is not a barrier, it is the prerequisite



Where AI Already Adds Value

Volume & Repetition



Scaling Expertise Without Diluting It

AI scales expertise,
it doesn't create it

Volume to machines and
judgment to people

More time for
interpretation and risk management



What Only People Can Do

Acceptable

Define data quality objectives and acceptance criteria

Defensible

Apply site, regulatory, and client context

Communicated

Stand behind defensible decisions

Risks of Getting AI Wrong

Poorly governed AI erodes trust

Incorrect outputs driven by poorly governed source data

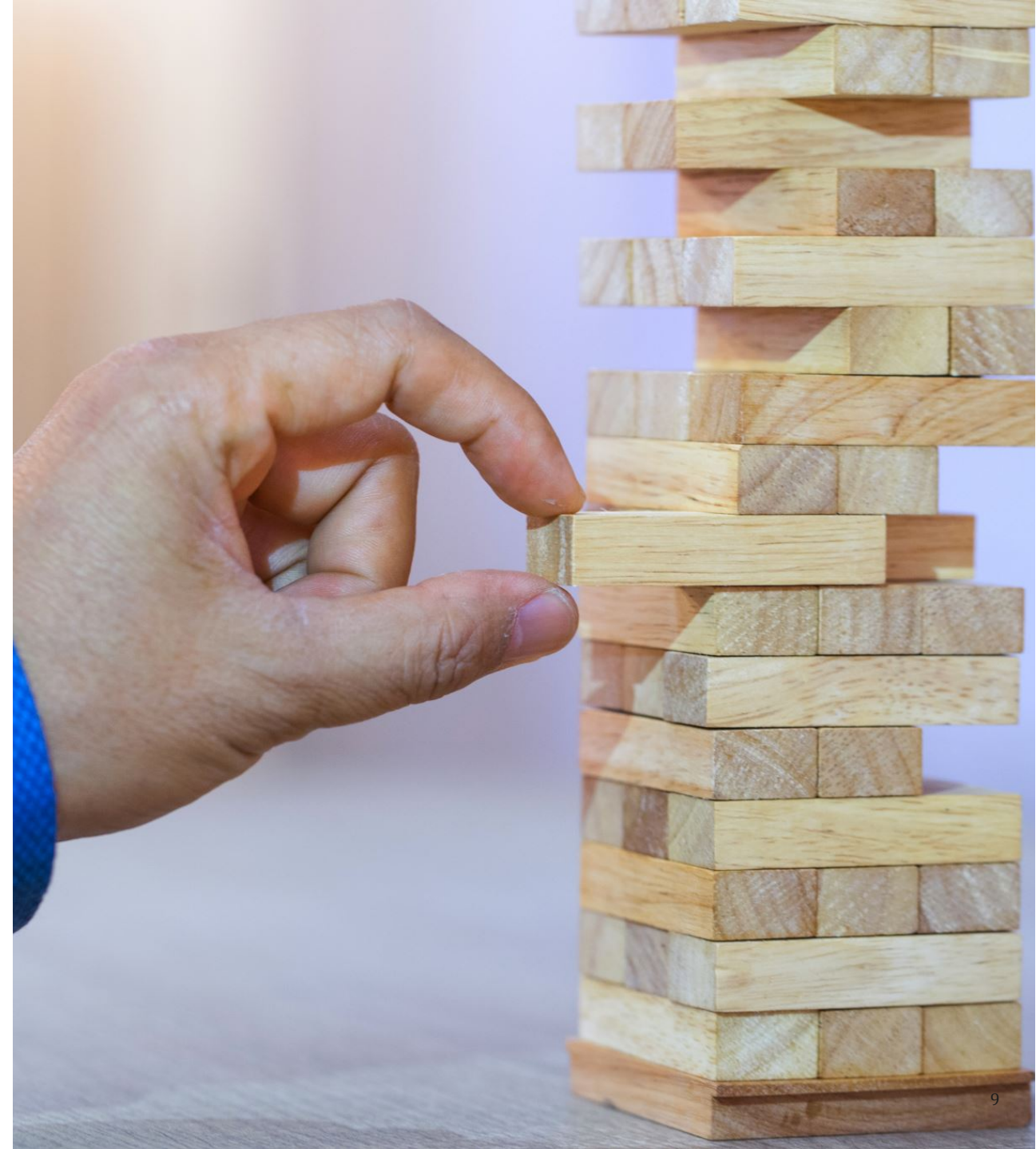
False confidence in automated outputs

Reduced transparency if not documented

50%+

of CEOs believe insufficient AI explainability could trigger a customer-trust or brand-credibility crisis.

-Dataiku, Global AI Confessions report: CEO edition 2026



Practical, Low-Risk Entry Points

Start Small, Stretch Far

- Start internal and non-decisional
- Discrete, modular tasks

Transparent

- Document assumptions and limits

Reversible

- Keep humans in the loop

Extending Data Manager Expertise

How ERM's Operational Excellence Audit Form puts AI to work without taking the expert out of the loop

ERM data managers audit facility data against ~35 Standard Operating Procedure compliance items.

Embedded Copilot-in-Excel prompts, developed by senior data managers, handle the volume work so experts can focus on judgment.

EXPERT JUDGMENT

What the data manager owns

- Defining what "compliant" means
- Interpreting findings in project context
- Deciding remediation vs. documented variance
- Signing off on the data going out the door

PATTERN & VOLUME WORK

Where AI extends reach

- Scanning thousands of rows for gaps & mismatches
- Spotting naming inconsistencies (MW-1 vs. MW-01)
- Cross-checking units, qualifiers, detection limits
- Catching duplicates across method overlaps

DEFINE

Data managers wrote the audit, the SOPs, and the AI prompts.

EXTEND

Copilot runs pattern checks across thousands of rows in seconds.

DECIDE

Findings come back to the data manager, who interprets and signs off.

From Data Managers to Data Stewards

How our role evolves when AI handles the manual work

Data Manager – Before AI

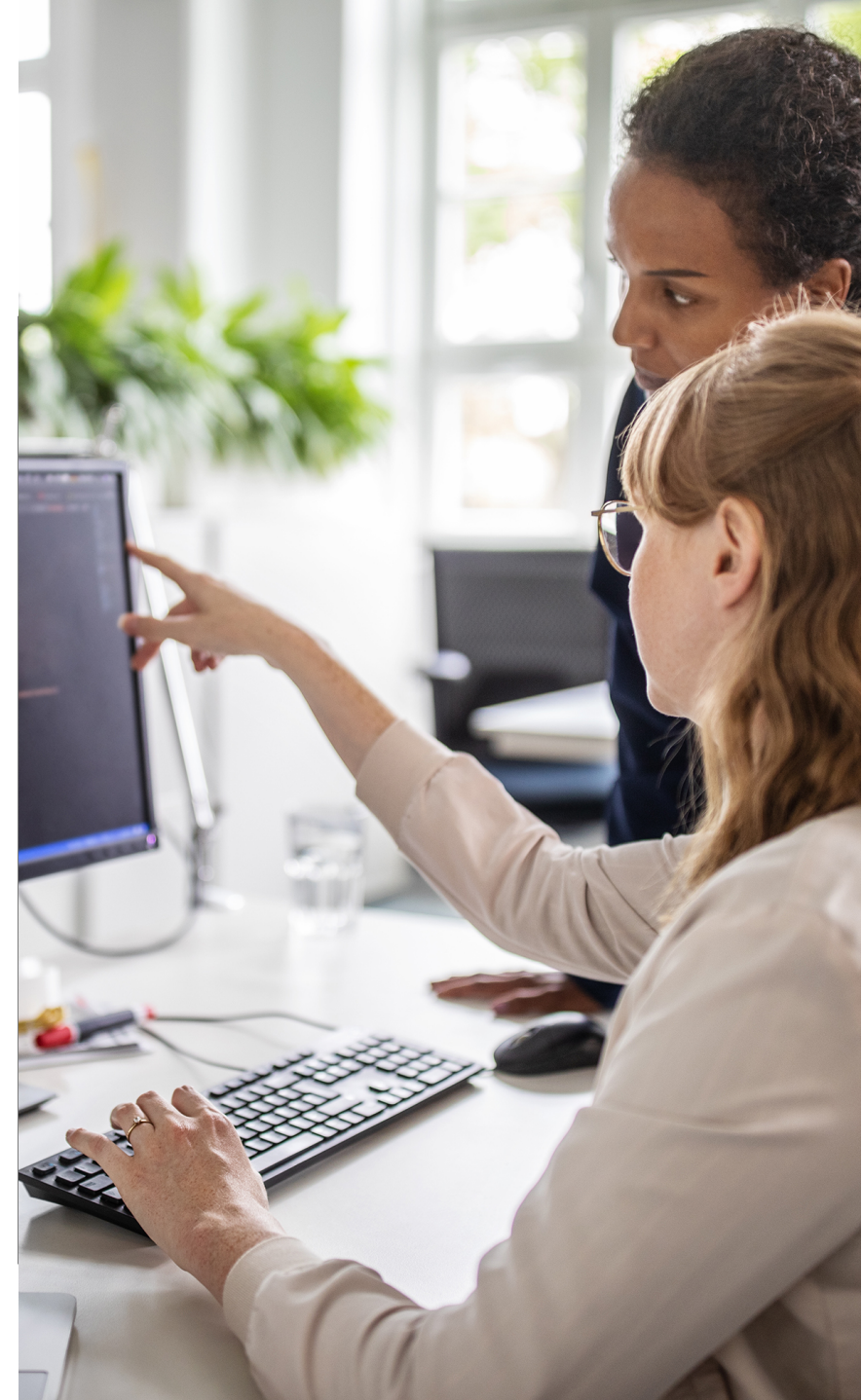
Mechanics

- Manual data handling
- Routine processing and cleanup
- Executing established SOPs
- Deep technical mastery

Data Steward – With AI

Judgement and Influence

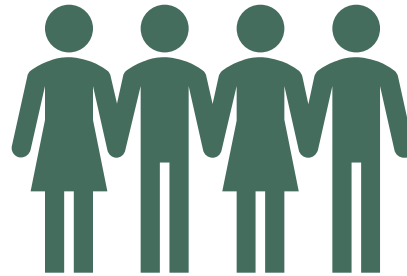
- Setting standards and safeguarding quality
- Greater influence on decisions
- Translating across teams and contexts
- Judgment, coordination, improvisation



Lead the Charge



Experiment
thoughtfully



Share lessons within
the ICEDM community



Keep people
accountable, always

Open Discussion

Let's hear from you

Your Data

If you looked at your organization's data right now, would it be ready to hand to an AI, and what's the biggest gap standing in the way?

Your Workflow

What's one task in your daily workflow that you'd trust AI to handle tomorrow and one you wouldn't hand over no matter how good the technology gets?

Your Role

How do you see your role changing in the next three to five years as AI becomes more embedded in environmental data work and what skill do you think will matter most?

Let's Collaborate!



Meghan Eschbaugh, P.E.
Principal Consultant | Data Operations
Leadership | @ ERM: Environmental Resourc..



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