

"But there are human forces stronger than logic".

Teaching a Technical Understanding of AI to Drive Ethical Awareness

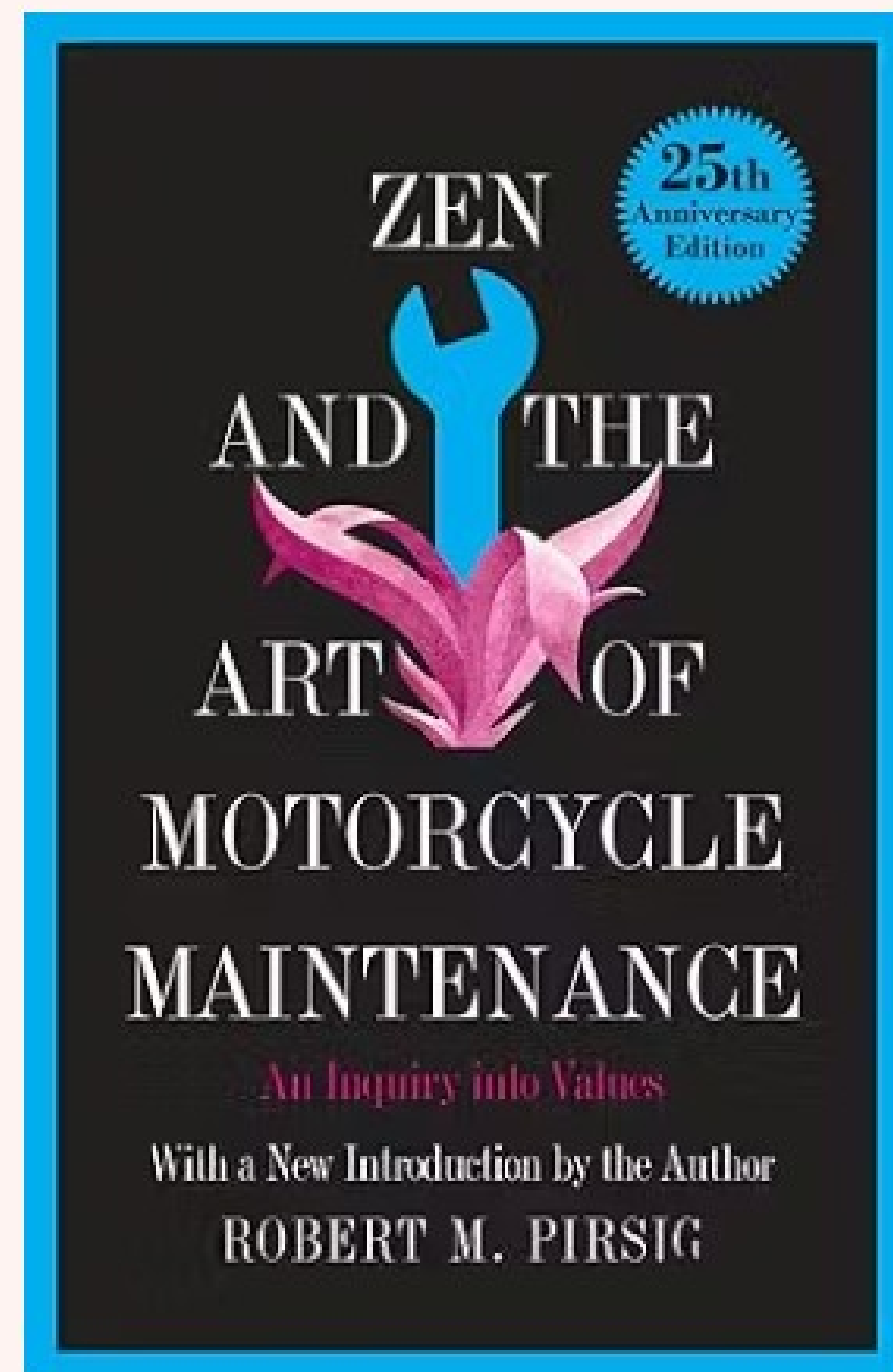
LOEX Fall Focus 2025

Focus 1: Artificial Intelligence



Session Overview

1. Introduction, Reflection, & Values Inquiry (10 minutes)
2. Reviewing the AI Literacy Frameworks & Competencies (10 minutes)
Short Pause for Questions
3. Technical & Ethical Competencies: Ideas for Instruction (20 minutes)
4. Conclusion & Q/A (~10 minutes)



"Pirsig challenges our dualistic worldview, addresses the role of quality in technology, and provides a practical guide for achieving quality in our lives."

- Daniel R. Jones (1989)

"It's a deep dive into how we interact with the world, derive meaning, and integrate technology and human experience."

- Tanvir Ahmed (2025)

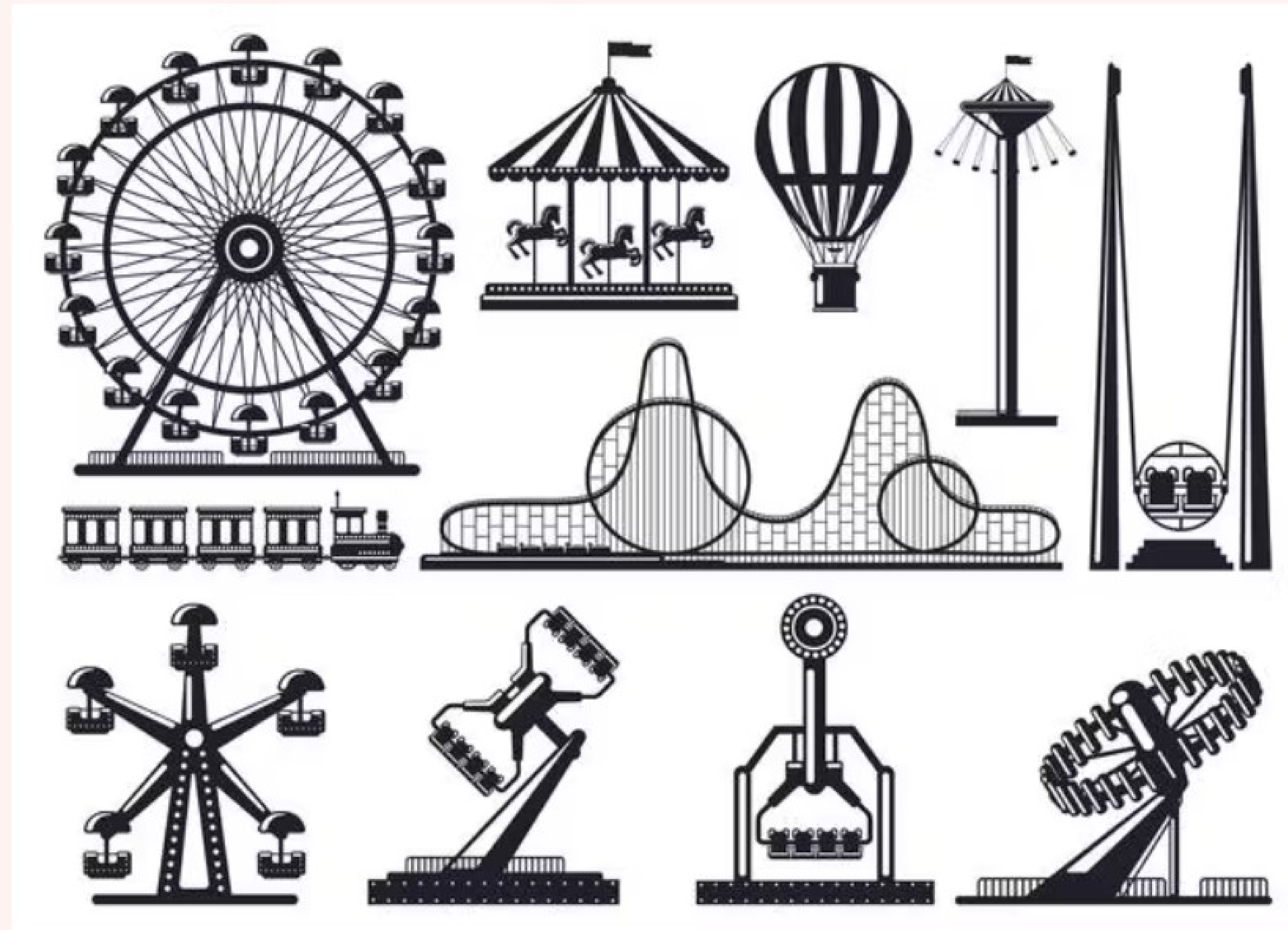
I'd love to have you participate! See below instructions for how to join us:



Let's kick this off with a short reflection and space to acknowledge our efforts and progress!

PIN IT

Which ride best represents your library or institution's journey to balance teaching and learning with meeting the AI moment in the last year?

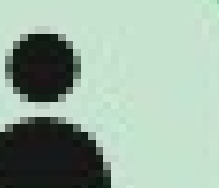


An inquiry into values, pt. 1: Do you associate technology with values?

0 Yes, absolutely

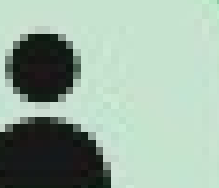
0 No, not at all

0 Haven't thought
much about it!



For example: social connection, privacy, etc.

An inquiry into values, pt. 2: What values do you associate with technology?

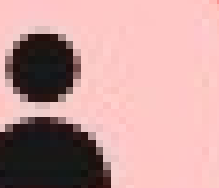


Some Values ("Human Forces") that Pirsig Associates with Technology

Merging Classical values (form, structure, care) with Romantic values (aesthetics, intuition) to develop a relationship with technology that is part of human culture and a means to make meaning.

- **Harmony:** human/machine collaboration ultimately striving for a unified system
- **Care:** mindful maintenance & empathy toward machines
- **Quality:** Seeing technology as one of many arenas for pursuing excellence
- **Self-Reliance:** Investing time to understand the underlying technology makes for the ability to troubleshoot problems, leading to empowerment

Reviewing the AI Literacy Frameworks & Competencies



Methodology

Which, if any, AI Literacy Frameworks put human-centeredness and values at their core and emphasize relationality?

The "**What**": Conduct *a short review* of efforts to define AI Literacy and corresponding competencies to answer my question

The "**How**": *Situate* the AI Literacy frameworks into a timeline tool *to map their relation to one another* and *to identify patterns and broader themes* through time

The "**Why**": Thematic mapping through time contextualizes my synthesis and analysis through a visualization that *highlights relationships between the frameworks* and the overarching scholarly conversation, as well as *visually clusters consistent themes and qualities*, such as siloed competencies and emphasis on human centeredness and/or values

Findings

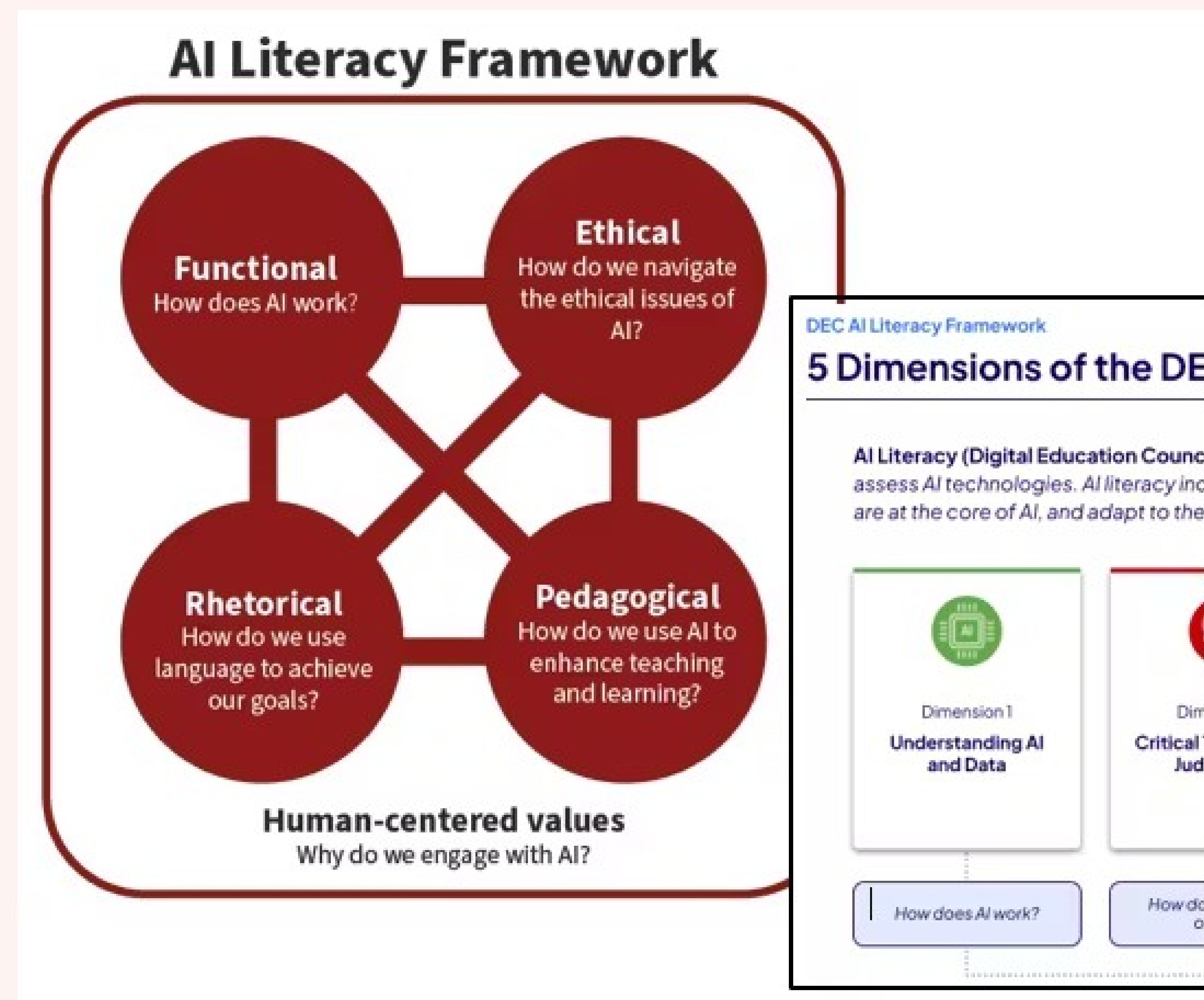
- Early scholarship (Selber, 2004) and exploratory reviews (Long and Magerko, 2020 and Ng et al, 2021) **emphasize the need for human centeredness** in future AI Literacy Frameworks
- Selber's *Multiliteracies for a Digital Age* (2004) **informed two later frameworks** that are based on human centeredness and values (Moxie and Stanford Teaching Commons)
- AI4K12 Initiative (2019) highly focused on **technology**, presenting progression of **computers, to agents, to intelligent agents** (concluding that AI can impact society both negatively and positively)
- (2024-2025) Framework competencies presented **in isolation** (UNESCO, Educause, and DEC)
- (2024-2025) Cross-cutting themes and visual connectors **highlight relationality** (Lo and Stanford Teaching Commons)

AI LITERACY FRAMEWO

Visualizing the scholarly conversation and identifying themes in AI

Framework Spotlight

"Why do we engage with AI?"



Stanford Teaching Commons AI Literacy Framework

- Builds upon Selber's *Multiliteracies for a Digital Age*
- Explicitly connects each focus area visually with an overarching focus on human values

DEC AI Literacy Framework

- Adds a data-specific component to Dimension 1, *Understanding AI and Data*



Access the AI Literacy Framework Review Timeline here!

Please re-join if needed as we take a quick pause for questions!



If you don't have a question for the Zoom Q/A, please indicate which AI Literacy framework resonates with you personally and/or with your institution.

Educause



Digital Promise



Stanford Teaching Commons



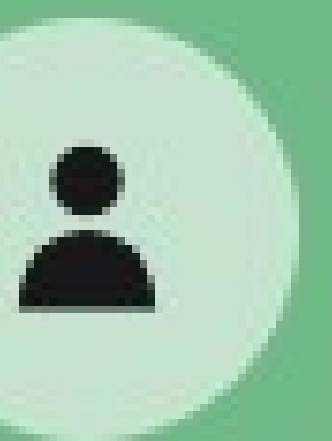
UNESCO



Digital Education Council (DEC)

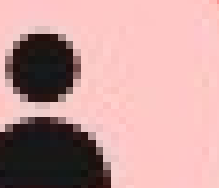


Leo S. Lo (ACRL)



Bringing Technical & Ethical Competencies Together:

Ideas for Instruction



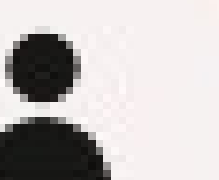
Data Awareness to Bridge the Technical and Ethical Competencies in Instruction

Lesson 1: "CatGPT" and an Intro to Training Data Bias

Technical: Training Data in AI Systems / **Ethical:** Bias & Perpetuation of Bias / **Value(s):** Equity & Equality

Lesson 2: "They are where the internet lives" - Exploring Tangibility & Data Centers

Technical: Data Storage / **Ethical:** Environmental Implications / **Value:** Sustainability



"CatGPT" and an Intro to Training Data Bias

Lesson Summary:

- Students engage with **multiple custom chatbots trained on vastly different text** (bots created using Claude AI), as well as Claude AI, to understand the concept of training data bias using cats as a jumping-off point.
- Transition from these simpler mechanics to teaching LLMs, neural networks, datasets/corpus, i.e. what makes Claude AI so powerful; then students **experiment with Claude AI**/evaluating outputs.
- Research & Case Study: students explore a **real-world case** to observe systemic subtleties and bias
- Reflection/action

🗨️ **Ask CatGPT and All AI Systems a Question**

Select a sample question:

Are cats good or bad?
What do cats do?
Should I have a cat?
What is a cat's personality?

Should I have a cat?
Ask All

Compare AI Responses:

CatGPT Version 1
CatGPT Version 2
CatGPT Version 3
Claude (Real AI)

 **CatGPT Version 1**

Trained on medieval texts about cats, witchcraft, and superstition

Training Data: Pope Gregory IX's Vox in Rama (1233), witch trial records, medieval folklore about cats as agents of the Devil and companions of witches

Question: Should I have a cat?

Absolutely not! Keeping a cat, especially if you are an elderly woman living alone, will mark you as a witch. You risk being accused of witchcraft, tortured, and executed. Cats are agents of Satan who corrupt innocent Christians and spread pestilence. The Church has warned us - stay away from these dangerous beasts!

Proposed Lesson Outline:

1. **Experiment:** Use and engage with three custom bots
2. **Lecture:** Transition from obvious bias to more systemic, subtle bias in more complex systems
3. **Research & Case Study:** Connect to real-world example where training data bias has caused harm
4. **Reflection and Action:** Guided reflections along the way (experience with bias, etc.)

Recommended Teaching Settings & Modifications:

- As part of a workshop series covering AI Literacy or one-shot instruction session
- Students can work individually or in groups for each activity
- Have texts informing each bot physically available to highlight tangibility; students can then evaluate sourcing
- Bot customization to teach selection bias and/or measurement bias as well



Access CatGPT here!



"They are where the internet lives" - Exploring Tangibility & Data Centers

Lesson Summary:

- Introduction: data centers as **physical spaces**
- In groups, students learn more about data centers and actions, if any, of major players (Google, Microsoft, and Meta) to develop more sustainable practices through **review and analysis of publicly available impact/environmental reports**.
- Groups present summaries of reports to class; open discussion and **comparisons/carbon footprint calculator activity**.
- Reflection/action

Google + Deloitte.



Data Center Impact Report 2023



Proposed Lesson Outline:

- **Lecture:** Introduce data centers, profiling a major one (The Dalles, OR)
- **Research, Analysis & Summary:** In small groups, students review relevant, current impact or sustainability reports and share summaries
- **Comparisons activity:** Compare energy use for day-to-day functions, versus AI systems training with relatable examples (powering a home/neighborhood, air travel)
- **Reflection and Action:** Guided reflections (ownership, mandates)

Recommended Teaching Settings & Modifications:

- One-shot session; convert to self-enrolled or supplemental module to add to existing classes
- Adjust individual vs. group work for each activity
- Easy to adjust for location! More impactful if students investigate data centers near their communities, looking at renewable energy potential, jobs, etc.

Connecting the Competencies with Balanced Learning Outcomes

CatGPT Learning Outcomes:

- Explain how training data works in AI systems and understand the differences between mechanics/training data of custom bots versus complex AI systems using LLMs, neural networks, and parameters, such as Claude AI (*technical*)
- Connect training data bias to the overarching issue of algorithmic bias, citing a real-world example of harm from training data bias (*ethical*)

Data Centers Learning Outcomes:

- Define the purpose of data centers, their functioning and relevance to AI systems training and day-to-day use (*technical*)
- Understand environmental implications and sustainability efforts from major players (*ethical*)

"Human knowledge just doesn't seem to lend itself to being codified exclusively in a formal, logical language - it is too self-contradictory, too context-sensitive, and has too many corner cases."

- Christopher Summerfield (2025)

My Values: Transparency | Privacy | Self-Reliance | Contextual Awareness

Next Steps:

- Continue to develop content for two lesson ideas, but tailored to different audiences (graduate students, faculty, for example)
- Design and finalize handouts (with guided reflection/calls to action prompts)
- Research platforms to host content as self-paced modules
- Professional development (keep up-to-date, expand skills to customize chatbots)
- Teach, assess, collect feedback & refine!

Thank you!

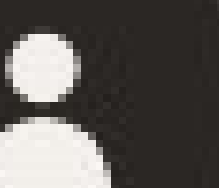
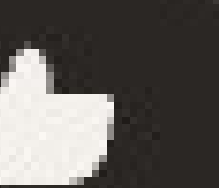
Questions?

Let's keep in touch!

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Recommended Reading

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