Trusting AI - Explainability

Harley Davis
VP, Automation Intelligence and France Lab
IBM
harley.davis@fr.ibm.com
@HarleyDavisPro

What do you trust?

Who do you trust?

You: But why?
Loan officer: Our AI told us to.

You: How do you know it’s cancer?
Doctor: Our AI told us it was.

Elements of Trust

- Robustness
- Fairness
- Explainability
- Lineage

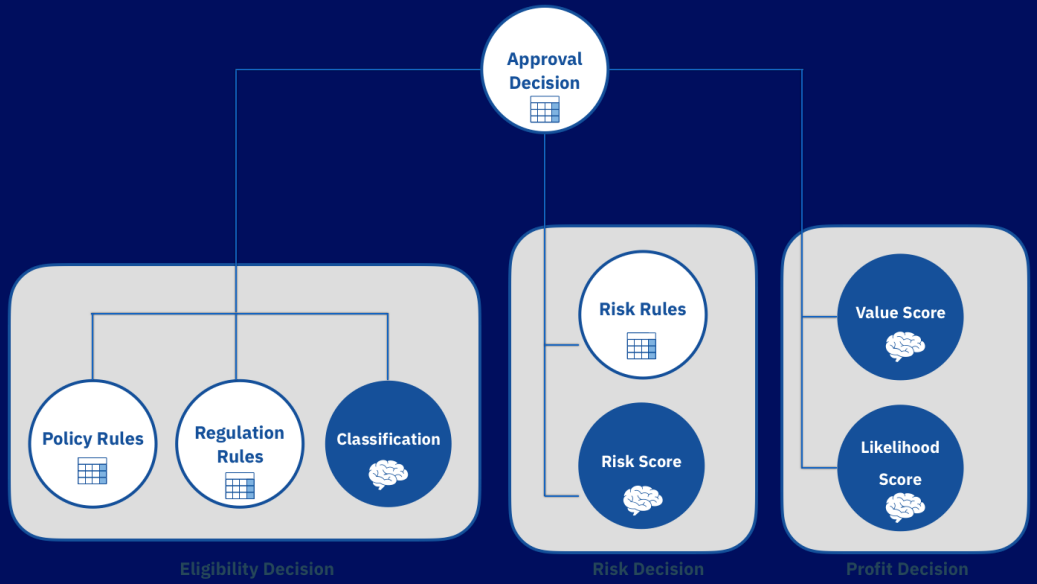
https://www.research.ibm.com/artificial-intelligence/trusted-ai/

What’s the problem?

Machine Learning

Approaches to Explainability

- Correlation
- Causal Models
- Counterfactuals
- Decision Models
- Symbolic Rules
- Missing features



For people, explanations are symbolic, not mathematical

Who do you trust?

You: But why?
Loan officer: Your risk profile was good but your revenue to existing debt is too low for this loan type.

You: How do you know it’s cancer?
Doctor: The image of your liver showed several lesions that are strongly correlated with cancer.

Thank you!
Danke!
Gracias!
Grazie!
Merci!
Obrigado!
And so on…

https://www.research.ibm.com/artificial-intelligence/trusted-ai/

EU AI Ethics Guidelines

Trustworthy AI should respect all applicable laws and regulations, as well as a series of requirements; specific assessment lists aim to help verify the application of each of the key requirements:

- Human agency and oversight: AI systems should enable equitable societies by supporting human agency and fundamental rights, and not decrease, limit or misguide human autonomy.
- Robustness and safety: Trustworthy AI requires algorithms to be secure, reliable and robust enough to deal with errors or inconsistencies during all life cycle phases of AI systems.
- Privacy and data governance: Citizens should have full control over their own data, while data concerning them will not be used to harm or discriminate against them.
- Transparency: The traceability of AI systems should be ensured.
- Diversity, non-discrimination and fairness: AI systems should consider the whole range of human abilities, skills and requirements, and ensure accessibility.
- Societal and environmental well-being: AI systems should be used to enhance positive social change and enhance sustainability and ecological responsibility.
- Accountability: Mechanisms should be put in place to ensure responsibility and accountability for AI systems and their outcomes.

https://ec.europa.eu/digital-single-market/en/news/ethics-guidelines-trustworthy-ai